

The Acquisition of Russian Aspect

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Table of Contents

Abstract.....	vii
Acknowledgments.....	ix
Introduction.....	1
1. Theoretical background	2
1.1 The two major approaches to acquisition.....	2
1.2 Criteria for acquisition	4
1.3 Context	6
1.4 Data used in acquisition studies.....	7
1.5 The acquisition of aspect.....	10
1.6 Previous research on the acquisition of Russian aspect.....	10
2. Questions and goals of this dissertation.....	14
3. Major hypotheses.....	14
4. Methods.....	15
5. Data analysis	17
6. Results of this dissertation	20
7. Structure of the dissertation	21

Part I: Russian aspect

Chapter 1: The Semantics of Russian aspect.....	27
1. Introduction	27
2. The structuralist approach: Russian aspect as a binary category	29
2.1 'Totality' as the invariant feature.....	31
2.2 'Boundaries' or boundedness as the invariant feature	32
2.3 Status of the features [+/- totality] and [+/- boundary]	34
3. Semantic definition of the perfective aspect used in this study	37
4. The approach of this dissertation: a neo-structuralist approach.....	38
Chapter 2: Aktionsarten.....	41
1. Introduction	41
2. Aktionsarten in Russian	45
2.1 The telic Aktionsart.....	49
2.2 The ingressive Aktionsart.....	49
2.2.1 Synthetic ingressives	49
2.2.2 Analytic ingressives	51
3. Systemic and communicative status of Russian Aktionsarten.....	54

Chapter 3: The Morphology of Russian Aspect	57
1. Introduction	57
2. Russian aspect: inflectional or derivational?	58
3. Morphological markers of Russian aspect.....	61
4. Tense and aspect combinations	64
5. The role of verbal pairs in Russian aspect	66
5.1 Theoretical status of aspectual pairs	66
5.2 The empirical status of pairs in language use.....	72
Chapter 4: The Pragmatics of Russian Aspect	75
1. Introduction	75
2. Aspectual functions	77
2.1 Perfective aspect	77
2.2 Imperfective aspect	82
2.2.1 The durative function	82
2.2.2 The statement-of-fact-function	83
3. The role of aspect in discourse structure	87
3.1 Sequentiality and foregrounding	89
3.2 Importance and foregrounding	94
4. The transitivity hierarchy	95
Chapter 5: An Integrative Approach to Russian Aspect	99
1. Introduction	99
2. Inherent markedness	103
2.1 Morphological markedness	103
2.2 Semantic markedness.....	108
2.2.1 General semantic markedness.....	109
2.2.2 Aktionsart specific semantic markedness.....	109
3. Contextual markedness	110
4. The role of markedness in language acquisition	117

Part II: The acquisition of Russian aspect

Chapter 6: Comprehension of Isolated Utterances (Level 1)	123
1. Introduction	123
2. Hypotheses	125
3. Design of the experiment and procedure	127
4. Results.....	132
5. Conclusions	141
Chapter 7: Description of Isolated Events (Level 1).....	147
1. Introduction	147
2. Design of the experiment and procedure	150

3.	Qualitative differences between Level 1 comprehension and production data	154
4.	Hypotheses	157
5.	Results and Discussion	159
5.1	Distribution of Aktionsarten over age.....	159
5.2	Distribution of aspect across age	164
5.2.1	General distribution of aspect	164
5.2.2	Distribution of aspect within the telic Aktionsart	166
6.	Conclusions	170
Chapter 8: The Description of Short Events (Level 2).....		173
1.	Introduction	173
2.	Design of the experiment and procedure	174
3.	Hypotheses	177
4.	Results and Discussion	179
4.1	Version 1	179
4.1.1	Distribution of Aktionsarten over age	179
4.1.2	Distribution of aspect over age	182
4.1.2.1	General distribution of aspect	182
4.1.2.2	Distribution of aspect within the telic Aktionsart	184
4.1.3	The distribution of tense within the durative Aktionsart.....	186
4.1.4	Types of telic imperfectives used.....	187
4.2	Version 2	189
4.2.1	Distribution of Aktionsarten over age	191
4.2.2	Distribution of aspect over age	192
4.2.2.1	General distribution of aspect	192
4.2.2.2	Distribution of aspect within the telic Aktionsart	195
4.3	On the variation within and across age groups.....	196
5.	Conclusions	199
Chapter 9: Complex Narratives (Level 3)		203
1.	Introduction	203
2.	Design of the experiment and procedure	205
3.	Hypotheses	207
4.	Results and Discussion	209
4.1	Distribution of Aktionsarten over age.....	209
4.2	Distribution of aspect over age.....	220
4.2.1	General distribution of aspect	220
4.2.2	Distribution of aspect within the telic Aktionsart	225
4.3	The role of anchor tense in narratives	229
4.3.1	The anchor tense strategy	230
4.3.2	Preferred tense within the anchor tense strategy.....	236
4.3.3	Mixed tense strategy.....	237
4.3.4	Anchor tense and its correlation with story-telling.....	238
5.	Conclusions	239

Chapter 10: Two Complementary Aktionsarten: Ingressives vs. Telics.....	243
1. Introduction.....	243
2. Ingressives and telics in the comprehension experiment (Level 1).....	245
3. Hypotheses.....	247
4. Telics and Ingressives in production: narratives (Level 3).....	249
4.1 Synthetic ingressives.....	250
4.2 Analytic ingressives.....	253
5. Telics and Ingressives in Production: isolated events (Level 1).....	256
6. Conclusions.....	260
Chapter 11: Conclusions.....	265
1. Findings and explanations.....	265
2. Relevance of this study for theories of language acquisition.....	271
Appendix.....	275
References.....	277

Abstract

The central goal of this dissertation is to introduce and provide evidence for the *Hypothesis of Context-Driven Learning*, which states that linguistic forms and functions are first acquired in highly specific contexts before their usage becomes generalized. Support for this hypothesis comes from one comprehension and three production experiments with children aged 2 – 6. The experiments vary with regard to the complexity of the discourse context in which aspectual forms are embedded. Their analysis leads to four major conclusions.

First, Russian aspect is not an innate category or a category that is readily available from the beginning of language acquisition. The acquisition of this category, with its complex morphology, semantics and pragmatics, is a long process that is not completed even by age 6.

Second, aspect acquisition is directly influenced by a multitude of factors: Aktionsarten (lexical temporal specifications of verbs), morphology, discourse complexity, and narrative competence. For example, the developmental pattern is different for telic and ingressive Aktionsarten, for synthetic and analytic morphology, for isolated and concatenated utterances; and the development of aspect competence is tied to the development of narrative competence.

Third, the distribution of aspectual forms within each level of discourse complexity is approximately the same across age groups, but differs widely across these discourse levels. Thus, children are sensitive to adult-like contextual frequency distributions from early on. However, younger children do not yet master the full range of canonical functions of these forms. For example, the backgrounding function of the imperfective emerges relatively late, i.e., only when children's narrative competence has developed sufficiently.

Fourth, there is a stage in which children use aspect in a context-dependent way, without making generalizations across contexts. In some contexts their form/function

mapping corresponds to that of the target language, while in other contexts it does not.

Together, these four results suggest that there are three stages involved in the acquisition of Russian aspect, and perhaps in acquisition in general. Stage 1 is tied to individual verb meanings, here Aktionsarten. Stage 2 is characterized by context-driven learning. In Stage 3, the target stage, usage is no longer tied to specific contexts.

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Introduction

Despite the importance of aspect for Russian grammar and the importance of Russian aspect for general aspect theory, we know very little about how aspect is acquired. The goal of this dissertation is to help close this gap.

The Russian aspect system consists of a binary opposition of a perfective and an imperfective aspect. In Russian each verb form belongs to one or the other of these two aspect categories. Aspect is a non-deictic temporal category that indicates how a certain action, situation or event is represented in time, focusing on the structure of the event denoted by the verb (cf. Peškovskij 1928/1956). The perfective aspect focuses on the boundaries of an event, whereas the imperfective aspect is unmarked with respect to this feature. Aspect is morphologically marked with a variety of different markers (cf. Chapter 3).

Russian is often cited as a paradigmatic aspect language. This is probably due to the fact that the discussion of aspect as a linguistic category in general started out with the investigation of the Slavic languages. This has led to a tendency by some Slavic linguists to even deny that there is aspect in any other language. This view would make the Russian aspect system incomparable to languages with very similar even though not identical categories. The other extreme, which leads to the same result, was proposed by Dahl (1985: 84ff.), who suggests that Russian is so idiosyncratic in its aspect system that one could claim that Russian does not have a perfective and imperfective aspect in the sense that other languages do. Neither of these radical approaches can explain Russian aspect, but rather treats it as an idiosyncratic category. It is more fruitful to accept that aspect is manifested differently in different languages, but to assume there is still a common denominator, namely that it is a non-deictic temporal category. It is then the task of the researcher to find out the differences and commonalities comparing different languages.

Yet, it is true that the status of Russian aspect as a category is still not clear. It is for instance still disputed whether Russian aspect is an inflectional or a derivational category (a matter discussed below in Chapter 3). Moreover, the morphological marking of Russian aspect is so complex and heterogeneous that it might seem even dubious to speak of a morphological category at all.

Studies on aspect generally agree that many difficulties arise from the complex interaction of aspect with the lexical characteristics of the verb, i.e., with semantic modifications of a base verb (see Agrell 1908, Maslov 1948, Isačenko 1962 etc.), and in particular with the temporal structure of the verb. This temporal structure is called here *Aktionsart* (see Garey 1957, Dowty 1979, Declerck 1979, Breu 1994, Timberlake 1985, etc.). The interrelation between aspect and *Aktionsart* will be a major concern in this dissertation. It is discussed in detail in Chapter 2.

Thus, Russian aspect itself has been a mystery for centuries and continues to fascinate linguists. The acquisition of this intricate category is even a greater puzzle. How can something as complicated and complex as Russian aspect be acquired at all? The answer to this question depends to some degree on the theory of acquisition we assume, and this is what I discuss first in the following.

1. Theoretical background

1.1 The two major approaches to acquisition

In studying the acquisition of a linguistic category one has to at least to some extent choose the theoretical approach one takes on language acquisition in general. In language acquisition studies we find the same bifurcation into formal and functional approaches (or syntactocentric vs. communication and cognition perspectives Van Valin and LaPolla (1997) as in general linguistics. The main characteristic of the formal approach is the peculiarity of its object of investigation. Chomsky (1981a: 7) himself states that he is not interested in communication, or even language, but that his focus is what he defines as core syntax. Syntax in his sense is the sum of all

formal representations that can describe all grammatical sentences of a language. While the main goal of Chomsky and his followers is to explain how language acquisition works, this is not an empirical problem for him but a logical problem. Empirical data, except for judgments of grammaticality, are considered irrelevant for the theory, and grammaticality judgments are obviously useless in language acquisition studies. Chomsky assumes an innate language acquisition device (LAD), and on this assumption, the goal of all linguistic investigation is to characterize this device, which is furthermore stipulated to consist exclusively of syntax, independent of other cognitive abilities. A linguistic analysis is only considered explanatory if it contributes to the solution of this problem. An explanatory analysis can take only one of two forms: "(1) it shows that a given phenomenon can be subsumed under or derived from a principle or rule which has already been hypothesized to be part of the innate mental organ of language, or (2) it demonstrates that a particular rule, constraint, etc. must be part of the innate mental structures." (Foley and Van Valin 1984: 6). Thus, aspect in such an approach either is considered to be an innate category or it is derived from a principle of grammar. To my knowledge, no one has ever tried to derive the category of aspect from the formal principles of the LAD; and in recent versions of transformationalist theories, aspect is one of the "functional categories" and as such the head of the aspect phrase in syntax.

Functional theories, on the other hand, deal with language in all its complexities, grammar being only one part of it. The main characteristic of the diverse functional theories is "their belief that language must be studied in relation to its role in human communication." (Foley and Van Valin 1984: 7). This is the main difference from formalist theories, for which communication is outside the scope of investigation. In a theory that takes communication as the main focus of investigation, several inter-related factors, such as the socio-cultural background of a conversation, the context in which a conversation takes place, the relation of the interlocutors and their cognitive development, etc., play a role.

Such a theory is necessarily multi-dimensional. Language acquisition is seen as one part of general human cognition, and the way language is learned is not necessarily qualitatively different from the development of other cognitive abilities.

Thus, the main difference between functionalist and formalist theories does not reside in assumptions about predispositions to language, but rather in the nature of these. Whereas formalists believe that grammatical structures are hard-wired, functionalists assume more general innate cognitive capacities. The ability to learn a language is one part of these general cognitive capacities. Aspect in such a theory would not a priori be assumed to be innate, but rather other alternative explanations, e.g. pragmatic explanations, would be tested first. This does not exclude the possibility that aspect is innate, but it is an empirical issue.

My approach to language acquisition can be classified as functional, with a strong emphasis on empirical data. I do not assume innateness of any specific linguistic features as a premise of the investigation. The assumption of innateness is the last resort we should take, i.e., when all other possible explanations have failed, we can start appealing to innateness. As long as we are committed to one of the basic principles of science, namely that unobservable entities should be hypothesized only if everything else fails, the innateness assumption can be supported only by falsifying alternative explanations. Thus, one has to check first whether there might not be another explanation that has empirical support, before assuming innateness. This is how the present study will proceed.

1.2 Criteria for acquisition

A major problem for studies of language acquisition is to determine when a linguistic category has been acquired. It is clear that we can never determine the exact point in time when a category becomes actually acquired. This is so because children's recorded utterances can give at best a close approximation of the point in time when something becomes acquired. One of the main questions is how many correct instances of a certain linguistic form have to be detected before we can claim that the form has been acquired.

Acquisition criteria vary widely in the literature. They range from the extreme assumption that one instance is enough (Radford 1990) to approaches like that of Brown (1973), who requires that a form appears in 90% of required contexts. This latter criterion is quite strict and demands in the first place a thorough linguistic analysis of all the possible contexts of a morpheme. Brown has shown that it is extremely difficult to define such an acquisition criterion in terms of spontaneous frequency, because the numbers depend on the topic of conversation, the character of the interaction, what the child wants to say, and what s/he is able to say (Brown 1973: 255). This is what we might term the problem of occurrence. It might happen that a child has acquired a certain category, but she does not use it for a while or we miss the occasion when she uses it. This is a specific problem especially with longitudinal studies, which record the child only once a week or even only once a fortnight. Usually, observational studies do not control for the context and the subjects are free in their choice of interaction. This has an advantage, but also a disadvantage. The advantage is that it delivers natural data. The disadvantage is, however, that we can never be sure whether the reason why some form or category failed to occur was because the context did not require it, or because the child had not yet acquired the category.

Further, we have to specify whether we are talking about comprehension or production. Language acquisition studies which ignore the distinction between comprehension and production provide an incomplete and inadequate picture of the acquisition process. It has been shown that comprehension and production do not necessarily match (Clark 1982). Mismatches in which comprehension precedes production are very common. I will show in the present study that opposite mismatches are to be found as well, i.e., that production in some instances may precede comprehension. This shows that such general statements as that comprehension precedes production are not generally valid, and it strengthens Bates, *et al.*'s (1988) claim that comprehension and production are partially dissociable mechanisms.

Keeping these points in mind, it is important to explicate in detail what we expect from a child if we want to claim she has acquired a certain category, here aspect. This

issue can be subdivided into two general questions, which are relevant for any language acquisition study:

Which features must be found in comprehension and production if we are to claim that a certain grammatical category has been acquired?

How often, and in how many different contexts, do the linguistic features of a grammatical category have to occur before we can claim that the acquisition process has been completed?

I will attempt to answer question 1 in Part I of the dissertation, where I lay out the aspect system of Russian and the tasks of the children. It is known that comprehension and production of a form do not necessarily appear simultaneously. We cannot take for granted that if a child uses a certain linguistic form in one specific context s/he uses or even understands the same form in other contexts. Hence it is imperative that we look at different types of data with different contexts to get a comprehensive picture of the acquisition process. Only if a form occurs in a variety of contexts, does it seem to be justified to claim that the form has been acquired.

1.3 Context

'Context' is one of the important key words in functionalist theories. The term itself, however, has received different interpretations from different researchers. Let me present some of the different usages of the term, before I explain my own usage.

First, there is the linguistic context of an utterance, i.e., the preceding and following utterances in a discourse. This type of context, which I call *discourse context*, is very important for establishing the meaning of an utterance and to understand its impact on the text (Duranti and Goodwin 1992).

Second, there is *extralinguistic context*, or the situation in which an utterance takes place. Several researchers have shown that the use of linguistic devices is often dependent on the extralinguistic situation in which the utterance occurs, i.e., specific linguistic features are restricted to certain contexts (cf. also 'activity types' (Gee and

Savasir 1985), 'interactional format' (Lemos 1981), or 'scenes' (Slobin 1985)). In this type of research it has been shown that certain forms occur only under very specific circumstances.

Another way of using the term is close to the understanding of the term *genre*. Here the text type is relevant for the interpretation of an utterance. It is important for the interpretation whether the utterance is, for example, part of a narrative, a conversation, a monologue, etc.

There is one other interpretation of the term *context* that has not received much attention so far. This understanding relates to the structure of a text expressed by the level of discourse complexity, i.e., whether an utterance comes in isolation or is part of a larger textual structure. The complexity of the structure can be of particular importance for the appearance and use of linguistic forms such as aspect. This is the sense of the term *context* that will be applied in this dissertation. That is, context here refers to the complexity of the discourse environment in which an utterance is embedded. In the experiments reported on in this dissertation, context in this sense will be manipulated by embedding stimuli into discourse environments of variable length and variable degrees of integration into larger texts.

1.4 Data used in acquisition studies

If we want to learn about the acquisition process, our first task is to gather data. There are basically two main approaches to gathering data for such a study. One approach is to collect longitudinal data, either in form of a diary or taped data (video or audio) or a combination of both. In a longitudinal study a child is observed over a longer period of development. Such a study can last for from several weeks to several years, depending on the research interest. The other approach is to conduct experiments in order to answer specific research questions. Both approaches have advantages and disadvantages; ideally both types of data are used and compared.

In the early days of first language acquisition research, studies were based exclusively on observational data, i.e., on more or less detailed diary studies gathered by the parents of the observed children. The great advantage of such studies is that the

observer is very familiar not only with the linguistic development but also with the general cognitive development of the child. The observer usually knows very well what the child means by an utterance even if it is unintelligible for an outside observer. Usually s/he spends all day with the child and can note down all the utterances s/he is interested in. Thus, such studies on the whole provide a very broad and comprehensive picture of the acquisition process, including the extralinguistic development of the child. However, the utterances registered are necessarily biased toward the interests of the researcher, and usually only a fraction of what was uttered by the child over the day can be included in the diary. This is especially true after the child has passed the two-word phase and the vocabulary explosion sets off. This last point, however, is a general problem of all studies and is not specific to diary studies. A specific shortcoming of diary studies is the lack of linguistic and extralinguistic context of the utterances. For the study of some linguistic features, such as for instance aspect, the discourse context an utterance is embedded in is very relevant. However, often it is simply technically impossible to note down all the relevant details and still concentrate on the subsequent utterances of the child or stay engaged in a conversation with the child. Further, diary studies necessarily restrict the researcher to one child, or perhaps to siblings. This means that the results are based solely on the individual development of one child, and one cannot be sure that they can be generalized.

The other type of longitudinal study, taped interactions, has other advantages and disadvantages. Their great advantage is that they provide a complete picture of the linguistic context of an utterance. Video-taped studies even give the extralinguistic context. This enables the researcher to better interpret the data, and makes it easier to identify forms which were mere repetitions of a prior utterance of an interlocutor. However, this type of data necessarily gives a much narrower picture, and many utterances the child produces during the day go unnoticed. Further, the utterances of the child depend largely on the activity s/he is engaged in. This means that the picture of a videotaped study can be biased if the same activities are always chosen during a recording session. This shortcoming can, however, be avoided if we work with a

corpus that is large enough, i.e., if we have enough recordings in short intervals. Pioneering work in this direction is being undertaken at the Max Planck Institute for Evolutionary Anthropology in Leipzig, where high density corpora on German and English have been collected. Instead of recording a child once a week or once every fortnight, they recorded a child for six hours a week in regular intervals. This method ensures that a large percentage of the utterances the child makes are recorded. The disadvantage of high-density studies is that they are difficult to manage for the study of long-term development.

Even though both diaries and taped interactions have certain shortcomings, they are an indispensable means to obtain natural data and learn about the order of acquisition. Further, they give the kind of all-round picture that no experimental study could deliver. Practically any question about the acquisition process can be addressed. This is a major advantage over experimental studies, which are usually of restricted use because they are typically tailored to one specific research question.

As we have seen, these different types of data have different applications, and vary in the type and range of questions they can answer. Ideally, if we want to make statements about the acquisition of a grammatical category, we make use of both longitudinal and experimental data. Such a comprehensive approach allows us to avoid possible bias resulting from the type of data we have worked with. This, however, will be the task of future research.

As already mentioned some research questions can be answered only in an experimental set-up which makes it possible to specify the context explicitly and to control for various factors. Further, a great number of children can be tested, a fact which makes it less likely that we will generalize some behavior that might be idiosyncratic to one child. The research questions of this dissertation are very specific and require precise control of contextual factors. Therefore, I chose an experimental method.

1.5 The acquisition of aspect

In the last few decades, aspect has been of major concern in language acquisition studies (cf. Bloom 1980, Harner 1981, Clark 1996 on English; Bronckart and Sinclair 1973 on French; Antinucci and Miller 1976 on Italian; Li 1989, Li and Shirai 2000 on English and Mandarin; Aksu-Koç 1988 on Turkish; Stephany 1985 on Greek; Weist and colleagues 1983, 1984, 1985 on Polish; Shirai 1995, 1998 on Japanese; see Li and Shirai 2000 for a recent summary and discussion of this research). One of the main findings was the correlation between aspect, tense and Aktionsart. In the languages mentioned above, a strong correlation was found in the use of the telic Aktionsart (including a goal or a result in its semantic) and the perfective aspect (in the past tense) and between the durative Aktionsart (states and activities) and the imperfective aspect (in the present tense). These correlations were found for different age ranges in different languages (from the earliest period of acquisition to age 7).

These findings were especially striking because the aspectual categories in the languages mentioned above differ substantially in their semantics and in their complexity and the morphological markers are very heterogeneous. This means that for each language, children are confronted with different tasks, but the strategy they apply to learn these categories is the same across languages.

1.6 Previous research on the acquisition of Russian aspect

The first major study on Russian language acquisition was conducted by Gvozdev (1961), the great Russian diarist of the beginning of the last century. He based his research on a detailed diary of the speech of his son Zenja, whose linguistic development he studied. Gvozdev's work was clearly pioneering, and his data and insights still play an important role in the field. Gvozdev also made some statements about the acquisition of aspect in particular. He claimed that the category of aspect is fully acquired from very early on, and specified that this claim was based on the absence of semantic errors:

"Usvoenie vidov odnositsja k očen' rannemu vremeni, no éto ne vesgda možet' byt' pokazano na materialax detskoj reči: ob usvoenii vidov govorit počti isključitel'no otsutstvie narušenij v ix upotreblenii." ('The acquisition of aspects is related to a very early period, but this cannot always be shown on the material of child language: the acquisition of aspect is nearly exclusively shown by the absence of failure in their usage.')

(Gvozdev 1961: 424-425)

His view then came to be received opinion and remained unchallenged to this day. However, it remains to be seen whether such a strong claim is warranted, based solely on the absence of semantic errors.

As argued by Brown, *et al.* (1968), we need to distinguish between errors of commission and errors of omission. Errors of commission are forms that depart from adult forms. Errors of omission are restrictions in the distributional range of a form (Bowerman 1985: 1265). Because errors of omission are difficult to detect, the focus of language acquisition research has been mostly on the presence and absence of errors of commission. For present purposes, I will concentrate on semantic errors of omission and semantic and morphological errors of commission.

Morphological errors of commission are easy to detect, but not so semantic errors. Morphological errors may give us interesting insights into overgeneralizations, which are important for detecting the rules a child forms at a certain stage of acquisition. Semantic errors, in contrast, give us insight into how the category is analyzed by the child. However, they are often difficult to detect in diary data, and one can never be sure whether the absence of these errors is due to the context or type of conversation the child is engaged in, or due to the child's linguistic competence. Very detailed knowledge – not only of the linguistic context of the utterance, but also of the extralinguistic context – is necessary to detect such errors. Most diary studies lack this kind of information, and the linguistic and extralinguistic contexts are usually not explicit and detailed enough to classify a linguistic form as a semantic error or an oddity. Even if the parent evaluates the diary, as Gvozdev did, one cannot rely on his or her memory to reconstruct the situation in which the utterance was made in order to judge whether a form is a semantic error or not, or even whether the

other aspect would be suited equally well or better. This is one of the main problems in studying Russian aspect in diaries.

Gvozdev's statements about aspect acquisition are based solely on the absence of semantic errors of commission, i.e., his son supposedly never used the perfective aspect when the imperfective aspect was appropriate and vice versa. This statement is rather questionable, given the fact that the child had what Gvozdev called "phonetic problems" that were directly relevant for aspect: there are instances in which the child omitted the prefix of a verb, and hence the verb he used would appear to be imperfective, if one were to judge by the form alone. Gvozdev analyzed *kat'il'a ic'ka* as *pokati*^{p1} *jaičko* 'he rolled the egg', i.e., as a perfective verb (Gvozdev 1961: 425). Instead of accepting this verb as imperfective as the form would indicate, and hence as a semantic mistake, or at least an inadequate usage, Gvozdev claimed that this was merely a phonetic problem, namely that Zenja usually shortened consonant clusters and left out pretonic syllables. This is a rather doubtful argument, especially because he also cites instances of the same time span in which Zenja did not seem to have any difficulties with pretonic syllables. Further, the diary lacks the parental linguistic context of the child's utterances. Hence it is very difficult to reconstruct Gvozdev's claims about aspect.

The only errors Gvozdev finds are of morphological nature, i.e., errors of commission. In order to make statements about acquisition, we need to also test for errors of omission.

A further problem with the investigation of aspect acquisition in diaries is that in many situations, both aspectual forms are equally grammatical and only the discourse context, such as the preceding utterance of the interlocutor (which is lacking in the diary), decides which form is more appropriate. Diary studies usually do not and, in fact, cannot give such fine-grained details, which would be necessary to judge the semantic appropriateness of a linguistic form. Thus, Gvozdev's data alone are not sufficient to justify the claim that aspect is acquired from the outset.

¹ Throughout this dissertation a superscript *p* indicates a perfective verb form, a superscript *i* an imperfective verb form.

There are not only problems with the evaluation of errors, but also with the claim that a category has been acquired if no errors of commission are detected. We always have to consider the possibility that the child is making restricted use of forms, i.e., that we are dealing with errors of omission. A child might make no mistakes at all, but use, for example, the perfective aspect only with a semantically restricted group of verbs and the imperfective aspect with another group. Another possible scenario is that the child uses the perfective aspect only in a very specific context, for example in the context of story-telling, and the imperfective aspect in all other situations. In these hypothetical scenarios we would never detect an error in the speech of the child, yet we would not want to claim that she has acquired the category of aspect.

In a more recent study on the earliest period of Russian aspect acquisition, Gagarina (2000), analyzing Gvozdev's diary and the diary of Varja (Protassova 1997), has shown that children seem to start out with both aspects simultaneously, but the majority of verbs are simplex imperfective verbs. Interestingly, all verbs children mark for past are verbs of the telic Aktionsart (Gagarina 2000: 241). All imperfective verbs (except for one instance) are used in the present tense. These findings corroborate the findings in an array of other languages. Thus, these findings show that Gvozdev is correct in stating that both aspects are used from the beginning, but the decisive fact is that they do not occur in free distribution. Imperfectives are used in the present tense and perfective telics are used in the past tense.

In sum, it seems most relevant to find the patterns, the strategies, and the stages that lead to the fully developed system of an adult native speaker. In order to do so, we have to deal not only with the presence of forms, but equally with their absence.

So far, the only knowledge we have about the acquisition process of Russian aspect is based on diary data. As shown above, longitudinal data can give us only limited insight into acquisition processes and the patterns underlying this process. We can never be sure whether an utterance in spontaneous speech is memorized or modeled after an utterance the child has heard sometime before, or whether it is really part of her productive linguistic knowledge (Maratsos 1992, Tomasello and Olguin 1993).

2. Questions and goals of this dissertation

The main goal of this project is to find out how Russian children from age 2 to 6 learn aspect. Specifically, I want to establish which parameters play a role in the acquisition process. It will be tested whether it is innate; or whether semantic, morphological, or pragmatic factors, or an interrelation of these factors, are important.

The main research question, namely, "How is Russian aspect acquired?", breaks down into four specific questions:

1. Is aspect an innate category, acquired in a single step at the very beginning of language acquisition; or is it rather learned in a slow and gradual process?
2. How does the acquisition of aspect interrelate with lexical Aktionsart and tense?
3. Is the production and comprehension of aspect independent of context, i.e., if one form occurs in one context, does this necessarily imply that it is used and understood equally well in all contexts?
4. What role does general cognitive development play in the acquisition of aspect?

3. Major hypotheses

There are two main hypotheses underlying this study. First, I hypothesize that the distribution of Aktionsarten and aspectual forms is not the same in all contexts, This is formulated in the *Hypothesis of the contextual relativity of aspect and Aktionsart*:

Hypothesis of contextual relativity of aspect and Aktionsart:

The occurrence and frequency of Aktionsart and aspect depends on the context.

If this hypothesis holds true, children have to learn these different distributions to become a proficient native speaker of Russian. This is claimed by the *Hypothesis of context-driven learning*:

Hypothesis of context-driven learning:

The acquisition of linguistic forms and categories starts in specific contexts and is only later generalized to other contexts.

4. Methods

To test these Hypotheses and the research questions stated above, I will rely on experimental data. Experiments can help to answer such questions in a precise way and to test specific hypotheses. Further, in an experiment we can test contexts which would not necessarily be encountered in conversational data, or at least not in such a systematic way. This is why I focus in this dissertation on experimental data gathered for this purpose. To work with experiments, however, entails that we can start earliest with 2-year-old children for some experiments and for most experiments only with 3-year-olds. This means that we cannot make any statements about the earliest usage, but only about correlations that are valid in the investigated age range. For the earlier period we need to rely on observational data. The results of the experiments can thus add to the insights gained from the diary data. To compensate for the shortcomings of the diary studies available, I video-recorded five children on a longitudinal basis. The results of the two types of data, i.e., the experiments and the longitudinal studies, will be compared in future research.

From a cognitive-functionalist perspective on language one expects that the acquisition of grammatical forms and categories is not based on the spontaneous emergence of decontextualized monolithic concepts, but instead starts out from very concrete and specific contexts and is only then gradually generalized to the adult concept. An important dimension of linguistic context is the complexity of the

discourse in which forms and categories are embedded. Testing mastery of aspect in this perspective requires testing very specific contexts. The choice of an aspectual form depends both on the linguistic and extralinguistic context. Narratives are a good tool to control for these contexts, and because aspect is a category that is particularly relevant for narratives, I chose to test the use of aspect in narratives.

We cannot expect a priori that aspect behaves the same on all levels of discourse complexity. Thus, we need to be careful in distinguishing different levels of discourse complexity in studying the comprehension and production of aspectual forms. I distinguish three levels of discourse complexity:

- Level 1: The use and the comprehension of aspect markers in the description of a single event, independent of other events.
- Level 2: The use of aspect in the description of an event that is composed of several subevents.
- Level 3: The use of aspect in the description of several complex events making up a story.

To test how children cope with these different levels of discourse complexity, I designed four experiments.

Level 1 is represented by two experiments, one of which tests comprehension of aspectual forms, the other production. Both experiments use the same video stimuli. The comprehension experiment of Level 1 tests whether children (age 2-6 years) start out learning aspectual differentiations by lexical means, i.e., by knowing Aktionsarten, or whether they have an innate primitive concept of aspect that they link to morphological patterns (Stoll 1998). The experiment tests the understanding of a series of aspectual pairs. Two criteria for the formation of aspectual pairs were used, namely Aktionsarten and morphological markers. The production experiment (children age 3-6) tests what aspect and Aktionsarten children prefer in the description of isolated events. Questions about the comprehension of aspectual forms are only testable on discourse complexity Level 1. On the other two, more complex levels we cannot exclude that other factors in the larger context give cues for the

comprehension of specific forms, and hence we would not be able to attribute the results to the understanding of the aspectual form alone. Further, on these more complex levels, it is very difficult to assess what exactly was understood by the child.

In the production experiment testing Level 2 (age range 3-6 years), I concentrated on the description of a single complex event. This test is also based on video material. I chose a short scene in form of a cartoon involving a mouse and an elephant provided by the Max Planck Institute for Psycholinguistics in Nijmegen. This scene is especially useful for testing the use of imperfective and perfective aspect in a single complex event: a mouse tries several times to achieve a certain goal without success, before it comes up with a solution. In adult Russian, such a situation is usually encoded by the imperfective aspect (specifically by the conative function of the imperfective aspect); the result would be encoded by the perfective aspect. However, another reasonable choice of a native speaker could be to refer to each subevent with the perfective aspect, without conceptualizing the cartoon as a whole, i.e., the cartoon is not interpreted as a complex conative structure.

To test Level 3 (age range of the tested children 3-6 years), I chose two picture books that were especially suitable to test aspect at this level. The books are about a mouse family and their adventures. I used one book as an introduction to the test, because I wanted to get the children acquainted with the procedure before running the test. The preparatory book yields some interesting data for the investigation of verbs of motion. But for the present project I will use only the data gathered from the second book. The main aim in the study of these stories is to find out whether there are correlations between the use of aspectual forms and Aktionsarten. Further, factors like the use of tense and the cognitive development of the child are tested in the study.

5. Data analysis

In the analysis of the experimental data I defined age groups. Age groups are useful for a number of purposes. First, they can ensure that one gathers data from a wide age range as possible with a similar density over the age interval one looks at.

Second, for an analysis of the data, such a division is a practical solution that can be helpful to get a first overview of the data. Third, they are crucial if one wants to test whether there is a significant behavior between children of different ages. However, the general practice to work with age groups has also a number of drawbacks and problems.

There are two ways researchers work with age groups. One way is to simply collect data for specific age groups, e.g., 3-year-olds, 4-year-olds etc. These data usually include the whole range of e.g., 3-year-olds, i.e., from 3;0 to 3;11. Such a division, however, can be problematic because it is a random division of the data, and much information is lost by such a grouping. Thus, the results can be biased for reasons such as the following. A division into age groups forces us to put for instance a 2;1 year old in the same group as a 2;11 year old, even though the 2;11 year is much closer in age to a 3;0 year old, who would be in the next age group. Thus, in principle two children who are one day apart in age can end up in different age groups, whereas children who are approximately a year apart end up in the same age group. This may result in a considerable distortion of the actual variance and lead to a bias in the results. One could argue that this is averaged out since the same problem arises for all the age groups, even though we cannot be sure that this difference matters equally for all age groups. This might apply if we dealt with a very large number of subjects. However, usually experiments in language acquisition do not work with enough subjects to control for this factor. Further, we cannot be sure that the variance of the different age groups is necessarily the same. It might very well be the case that there is hardly any variance for a specific age group, e.g. 6-year-olds, but a very large variance for another, e.g. 3-year-olds. These factors need carefully be considered in deciding whether one should use age groups or not.

One way this problem is sometimes addressed is that researchers select children around the midpoint between two age groups to assure that the age difference between adjacent age groups is as big as possible, e.g., they collect data from subjects age 3;6, 4;6, 5;6, etc. This however, excludes all the age points in between, and thus brings with it a considerable loss of information. Further, independent of that, there is

great variation in performance within age groups, and this variation is not necessarily the same across age groups. Sometimes, e.g., a 2-year-old can be equal in his performance to a 5-year-old. This information is lost if we worked with the mean of performance of different age groups.

One could argue that a statistical test such as for instance ANOVA or a chi-square can test precisely for just this factor. This is true, but the test is still based on an artificial division into age groups that do not have any independent justification. Further, a chi-square test or an ANOVA only tells us that population means are different beyond chance (chi-square) or beyond individual variation within the groups (ANOVA). These are important methods for testing whether there is a difference between several factors.

In general, however, a test relying on age groups answers our questions about development only indirectly, i.e., by testing for a development through a comparison the size and variance of the means. What we are actually interested in, however, is to find out is how age correlates with performance. For this, we need a regression or correlation analysis. A regression analysis has the additional advantage that we get to know the strength of correlations, we will see that acquisitional factors differ in how strongly they correlate with development.

In evaluating the data, I use both correlation and age-group analyses, taking advantage of both. Since we cannot assume normal distributions in the acquisitional process of Russian aspect, I chose nonparametric tests. To test the correlation between variables, I used the Spearman correlation coefficient, a standard non-parametric equivalent of the Pearson correlation coefficient. To find out whether there is a difference between specific variables, I defined age groups and tested differences between them with the chi-square method.

6. Results of this dissertation

This dissertation has four major results:

First, it will be shown that aspect is neither an innate category nor is it acquired in a single step, as is sometimes claimed. The acquisition process is gradual and not even completed by age 6.

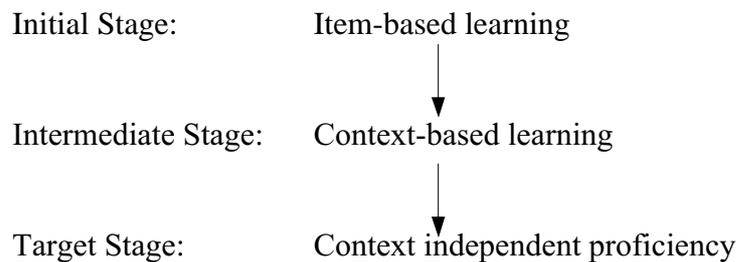
Second, I will show that there is no single factor that is alone responsible for the acquisition process. There are at least four factors which in interrelation inform the acquisition of aspect. These factors are: Aktionsarten, morphology, context of an utterance, and, last but not least, the cognitive development of the child. The exact interaction of these factors will be laid out in this study.

Third, I will show that the acquisition of aspect is context-driven. This entails that the results of a language acquisition study are not only dependent on the theoretical approach taken, but also largely on the type of data chosen. It is shown that it is crucial not only to take into account different types of data, such as longitudinal studies and experimental studies, but also to design experiments in such a way as to test different contexts and various levels of discourse complexity. Only then can we be sure to get an unbiased picture of the acquisition process. There is no reason to assume a priori that if a child uses or understands a certain form in one context she will understand or produce the same form in another context. Thus we have to test different contexts and tasks systematically.

Fourth, the experimental findings suggest that language acquisition in general proceeds in two steps. First, there is item-specific uses of linguistic forms, much as is suggested by Tomasello's and his colleagues' work (Akhtar and Tomasello 1999, Olguin and Tomasello 1993, Tomasello 1992, 1993, 1999) and by research on very early aspect usage (Antinucci and Miller 1976, Bloom, *et al.* 1980, Gagarina 2000). These usage patterns remain contextually restricted before they get extended in a second step to generalized grammatical structures. In both steps, a similar principle of generalization is at work, but while in the first step, the generalization applies to individual lexical items, it applies to individual usage contexts in the second step. In

this sense, the results presented in this dissertation adds to our understanding of language acquisition as starting from item-based usage patterns and ending with fully generalized grammatical knowledge. Figure 0.1 summarizes the steps involved in language acquisition.

Figure 0.1: Three stages in language acquisition



7. Structure of the dissertation

The study falls into two main parts. Part I shows that Russian aspect is so complex that the system indeed seems to be unlearnable. Part II shows how it is learned nevertheless, if we have the right theory. The dissertation is structured into 11 chapters, which are outlined in the following:

Part I: Russian aspect

Chapter 1 deals with the semantics of Russian aspect. Before I present my own approach, I will briefly outline the most widespread approaches, their common features and their differences. The question whether aspect is a grammatical or a lexical category will be addressed, because this has major consequences for the study of the acquisition process. Depending on the analysis of this matter, the acquisition of aspect must be studied as a grammatical or a lexical category.

Chapter 2 introduces the category Aktionsart. After briefly presenting the traditional approach to Aktionsarten and some more recent approaches, I will present how I define Aktionsart and how this category fits in with approach to aspect.

Chapter 3 addresses the morphology of Russian aspect. This is important in order to understand the complex tasks a child has to cope with. In this chapter I will also discuss the interrelations of morphology, aspect, Aktionsarten, and tense.

Chapter 4 focuses on the pragmatics of Russian aspect. I will focus on the function of aspect with especially emphasis on the textual functions of foregrounding and backgrounding.

Chapter 5 proposes an integrative theory of Russian aspect, incorporating the different linguistic levels and focusing on markedness relation within and across these levels.

Part II: The acquisition of Russian aspect

Chapter 6 presents the results of the comprehension experiment of Level 1, testing the understanding of the perfective aspect in isolated utterances. This chapter shows that aspect is not an innate category. The variables tested for possible relevance are Aktionsarten and morphological markers of the verb.

Chapter 7 discusses the results of the production experiment of Level 1, partly in comparison with the results from Chapter 6. The same stimuli were used as in the comprehension experiment. The main result of this chapter is there is no significant difference in the use of Aktionsarten and aspect across age groups. Further, the correlation between telic Aktionsart and perfective aspect found in a great number of different languages could not be confirmed in this context. Instead, an even distribution of imperfective and perfective aspect was found within the telic Aktionsart.

Chapter 8 presents production data testing Level 2. The data consist of a narration of a short event presented in a video clip. The experiment was presented in two versions, which will be compared. The distribution of Aktionsart and aspect looks different than in the Level 1 production experiment of Chapter 7. Here we find a strong correlation between the telic Aktionsart and the perfective aspect.

Chapter 9 consists of the analysis of the Level 3 experiment, i.e., the narration of a complex picture book. Special emphasis will again be put on the distribution of the different Aktionsarten and aspectual forms. These results will then be compared with the behavior of these Aktionsarten in the experiments of Level 1 and 2. We find still a distribution different from the experiments of Level 1 and 2. This is explained by an additional factor that comes into play in this context, namely the structuring of a text into foreground and background.

Chapter 10 compares the behavior of two complementary Aktionsarten: ingressive (verbs including a beginning in their semantics) and telics (verbs including a goal or result). By looking at the ingressive Aktionsart, this research expands on previous acquisitional studies, which by and large have concentrated on telics and duratives only. The comprehension of these Aktionsarten will be compared with the production on Level 1 and 3. The results of this comparison show that the acquisition of aspect is context-driven.

Chapter 11 presents the overall conclusions of this dissertation.

Part I

Russian Aspect

Chapter 1: The Semantics of Russian aspect

1. Introduction

In studies of language acquisition the term 'aspect' is used in two ways: it either designates the grammatical category aspect or the lexical category of temporal classes of verbs, also known as Aktionsart (Agrell 1908), time schema (cf. Vendler 1967) or lexical aspect (Timberlake 1982 1985b, Smith 1983). The distinction of these two notions is commonplace in Slavic linguistics, although there are alternative conceptions, which I briefly review later in this chapter. In Slavic studies the distinction has been terminologically codified for at least the last 100 years. Recently, this distinction was rediscovered in general linguistics by Smith (1983), who introduced the somewhat tautological term 'viewpoint aspect' (cf. French *aspect* 'viewpoint', Russian *vid* 'aspect, viewpoint') which she contrasts with lexical aspect. The term 'viewpoint aspect' corresponds to what is elsewhere simply known as aspect, and 'lexical aspect' is another term for Aktionsart or time schema. It has long been recognized that there is an important interaction between these two categories (cf. e.g., Maslov 1948, Bondarko and Bulanin 1967), and one of the major challenges of modern aspectology is to determine the exact nature of this interaction.

In language acquisition research, the use of 'aspect' as a cover term for both phenomena has contributed to much confusion and dispute based on misunderstandings (for a concise summary see Li and Shirai 2000). To avoid such confusion, I reserve the term 'aspect' for the viewpoint category (Russian *vid*). For the lexical semantic category of temporal classes, I use the term 'Aktionsart'.

Before I concentrate on the semantics and the definitions of the perfective and imperfective aspect, it is helpful to recall what kind of linguistic category aspect is. Aspect is generally recognized as a temporal category, but, in contrast to tense, it does not have a deictic component (cf. e.g., Peškovskij 1926/1956, Comrie 1976, Maslov

1984). Its focus is rather on the presentation of the temporal structure of the described event.

Comrie, based on Holt (1943), defines aspect as follows (also cf. Peškovskij 1926/1956 for a similar formulation):

Aspects are different ways of viewing the internal temporal constituency of a situation.

(Comrie 1976: 3)

This broad definition is meant to hold for aspect categories universally. In the following, we will see how it applies to the Russian aspect system.

There is no generally accepted definition of Russian aspect; the only point that aspectologists – except perhaps for Dahl (1985) – agree on, is that Russian has an imperfective and a perfective aspect. In Slavic aspectology, Russian aspect is usually considered to be a binary category, i.e., every Russian verb form is either perfective or imperfective. This applies to the majority of Russian verbs, but there is a small number of biaspectual verbs. A biaspectual verb can either take a perfective or an imperfective value, depending on the context. Examples of biaspectual verbs are: *ranit'*, 'wound', *obeščat'* 'promise', and *arestovat'* 'arrest', *ženit'sja* 'get married'. This subgroup is rather marginal and is not covered in this study.

Further, the standard distinction of aspect as a grammatical category and Aktionsart as a lexical category has become a matter of dispute. There are two very different approaches that are prevalent in the literature.

First, there is the traditional structuralist approach, which considers Russian aspect to be an inflectional category with an invariant meaning of the marked member of the privative opposition perfective-imperfective (e.g., Jakobson 1932, Maslov 1948, Bondarko 1971). This approach, which is concerned with the semantics of Russian aspect, has been most influential in Russian aspectology.

Second, there is the more recent discourse-oriented approach to aspect (Hopper 1982). The goal of this approach is to explain the role of aspect in discourse. A main tenet of this approach is that there is no clear-cut distinction between grammatical and

lexical categories, but there is instead a continuum between these two types of categories. The discourse approach is not concerned with invariants, but with the various functions of aspect and their use in context (e.g., Hopper 1982, Chvany and Brecht 1980). Discourse approaches usually do not rigorously distinguish between semantics and pragmatics, and sometimes even explicitly deny that they can be distinguished. Since this approach is not primarily concerned with the semantics of aspect, but rather with the use of aspect and its function in context, I will deal with this approach in more detail in Chapter 4, which is devoted to the pragmatics of Russian aspect. In the following, I discuss the structuralist approach.

2. The structuralist approach: Russian aspect as a binary category

Most modern theories of Russian aspect assume a privative opposition of the perfective and imperfective aspect. The perfective aspect is usually considered to be the semantically marked member in opposition to the unmarked imperfective aspect (Jakobson 1932, Forsyth 1970, Maslov 1974, etc.). The perfective aspect, as the marked member, has a very specific semantics. Definitions of this semantics, however, differ widely, as will become clear below. In contrast to the perfective aspect, the imperfective aspect, by virtue of being unmarked, is compatible with a wide range of contexts, including contexts which arguably belong to the realm of the perfective aspect. Since the imperfective aspect by definition does not have a positive meaning, I discuss its functions in Chapter 4 dealing with the pragmatics of Russian aspect.

Markedness relations of aspect are language-specific. The unmarked nature of the imperfective aspect is a fact about Russian; it is not universal. The markedness of the perfective aspect makes the Russian or Slavic aspectual system quite different from some other aspect languages such as Turkish, English, or the Romance languages, where it is the imperfective (or 'progressive') aspect that is the marked member of the opposition (Johanson 1971, Comrie 1976, Bickel 1996).

Aspect definitions based on markedness received common recognition with structuralism (Jakobson 1932). Jakobson's approach, which applies the apparatus developed by Trubetzkoy for phonology to semantics, became the basis for most aspect studies. However, this type of definition, where a positive meaning is attributed to one member of an opposition while the other member is characterized by the absence of this feature, is in fact much older. As acknowledged by Jakobson, earlier scholars like Vostokov (1831: §59) and later Nekrasov (1865) defined aspect in a similar way. The great accomplishment of structuralism was to incorporate these insights into a general theory of semantics.

In aspect studies of the structuralist tradition the perfective aspect is attributed a *Gesamtbedeutung*, i.e., an invariant. Such an *Gesamtbedeutung* is necessarily very abstract, since it must be part of every perfective verb, no matter what the verb's meaning or Aktionsarten class.

It is sometimes asked whether the imperfective aspect too has a *Gesamtbedeutung*. To attribute a *Gesamtbedeutung* to the imperfective aspect, implies, however, that one takes the opposition to be equipollent and not privative. Usually Russian aspect is analyzed as a privative opposition. Thus, by definition, the imperfective aspect cannot have a *Gesamtbedeutung*, only functions. Timberlake, (1982) has shown that the imperfective indeed has no *Gesamtbedeutung*, and this confirms the structuralist claim that Russian aspect is a privative rather than an equipollent opposition. The privative opposition presupposes that we can only have a definition of one member of the opposition, in our case the perfective aspect. For the imperfective aspect we can only describe the functions it can carry. As concisely summarized by Forsyth (1972: 493), the imperfective aspect encompasses "frequent but non-essential meanings (...), such as duration and repetition, and accommodates other common meanings such as conation, 'two-way' action and 'konstatacija facta'".

However, it is still true that to understand aspect in a comprehensive way, we have to account for the different functions of the imperfective aspect and their possible common denominator if our goal is to get a comprehensive picture of aspect.

Most aspect definitions which assume a binary opposition of perfective and imperfective aspect deal with one of two features: [+/-totality], or [+/-boundary], or a combination of the two. In the following, I discuss these two types of definitions.

2.1 'Totality' as the invariant feature

The first type of definition, which deals with the feature [+/-totality], goes back to Černy (1877) and since then has been prevalent in many works on Russian aspect (cf., e.g., Bondarko and Bulanin 1967, Brecht 1984, Isačenko 1962, Comrie 1976). Isačenko, based on Černy, offers the following definition:

Beim perfektiv ausgedrückten Vorgang stehen wir (...) außerhalb des Geschehens, überblicken das Ereignis als ganzes und fassen es in seiner Totalität auf.

(Isačenko 1962: 348)

Another proponent of the totality approach is Comrie:

... perfectivity indicates the view of a situation as a single whole, without distinction of the various separate phases that make up that situation; while the imperfective pays essential attention to the internal structure of the situation.

(Comrie 1976:16)

These definitions seem to be general enough to hold for all perfective verbs. However, in these definitions, the meaning of the aspectual form is either considered to be independent of the lexical meaning and syntactic characteristics of the verb, or, at least their interaction is not explicitly recognized. Thus, these definitions do not account for fundamental differences in the semantics of different types of perfectives subsumed under the term *Aktionsart*: For instance, some verbs (called 'delimitatives') imply a limited time span: e.g., *podumat'* 'think for a certain while'. Others, e.g. the verbs called 'ingressives' sometimes also called 'inchoatives', imply a beginning of an event, e.g., *zaplakat'* 'start crying'. Despite this variation, all these verbs are

perfective. While capturing a common impression that one gets from perfectives, this approach cannot account for the different effects the perfective aspect has in the different verbs. Further, even though it is obvious that this definition works very well for delimitatives and telic verbs, to define ingressives with the feature [+/-totality] seems to stretch the meaning of 'totality' too far; why should *zaplakalʹ* 'he began to cry' portray a situation in more totality than *plakalʹ* 'he was crying'? Indeed, a notion like 'start crying' seems to refer just to the opposite of [totality] – it denotes only **part** of an event, viz. its beginning.

Thus, it seems that definitions based on the feature 'totality', while intuitively correct for most perfective verbs, are too general to account for the different lexical classes belonging to the perfective aspect.

2.2 'Boundaries' or boundedness as the invariant feature

This type of definition makes reference to the boundaries or limits inherent in the semantics of the perfective verb. In Russian linguistics this feature is known by the term *predel'nost'* 'boundedness' (cf., e.g., Vinogradov 1947).

Definitions referring to boundaries go back to Vostokov, who defined the perfective aspect as:

The perfective aspect shows an action with the meaning that it has begun or ended.

(Vostokov 1831: 76)

This definition served as the basis for Jakobson's definition of the perfective aspect:

Exakter könnte man definieren [referring to Vostokov's definition – SS], dass die Perfektiva im Gegensatz zu den Imperfektiva die absolute Grenze der Handlung ankündigen.

(Jakobson 1932: 6).

In theories operating in this tradition, aspect directly or indirectly operates on the semantics of the verb, more specifically on the temporal structure of the verb. An especially clear definition focusing on this feature was given by Karcevski:

... la perfectivation d'un procès n'est autre chose que la concentration de notre attention sur l'un des moments concrets du procès à l'exclusion de tous les autres, d'où l'illusion que le procès perfectif n'a point de durée, illusion, disons-nous, car tout procès a nécessairement une certaine durée. Quelque soit ce moment: final (spet'), initial (zapet') ou autre, il est subjectivement pensé comme moment résultatif dans on zapel l'acte est consommé tout comme dans on spel, puisque notre intérêt est porté précisément sur le point de départ du procès.

(Karcevski 1927: 98-99).

The feature boundary is indeterminate as to whether the boundary is initial, final or initial and final. Thus, this type of definition seems to be better suited to account for the interaction of Aktionsart and aspect.

The interrelation between aspect and the temporal characteristics, i.e., Aktionsart, of a verb has long been recognized and is commonly accepted by now (e.g., Agrell 1908, Maslov 1948, Garey 1957, Isačenko 1962, Bondarko and Bulanin 1967, Forsyth 1970). However, only recently has this interaction been explicitly formulated in an aspect theory for Russian by Timberlake (1985), and in form of a universal aspect theory by Breu (1984, 1985, 1988, 1994), Sasse (1991a) and Bickel (1996, 1997, 2000).

The above-mentioned theories differ in certain respects, but their common characteristic is that they define aspect with respect to Aktionsarten. One exception to this are theories that focus only on the final boundary, which means that they focus exclusively on the telic Aktionsart. These theories go back to Miklosich (1868-74) and they are still prevalent in most textbooks of Russian. However, most researchers agree that having a result is not a necessary condition for the perfective aspect. There are other groups of verbs, such as for instance verbs indicating the beginning of an action (ingressive verbs) that can be perfective as well.

To sum up: in theories operating with the feature 'boundary', the perfective aspect is characterized by operating on the boundaries introduced by the Aktionsart of a verb. There are thus two levels involved in these theories, the lexical-semantic level of Aktionsarten and the grammatical level of aspect.

There is a third type of definition, which combines the two features of totality and boundedness. Forsyth, for instance, based on Maslov (1959), who again relies on Razmusen (1891), defines the perfective aspect as a form that "expresses the action as a total event summed up with reference to a single juncture." (Forsyth 1970: 8). This definition contains both features in a nutshell and is probably the clearest definition of the perfective aspect available. On the one hand it transmits the impression one gets by encountering a perfective verb as expressed in "total event". On the other hand it is specific enough to take care of the different semantic consequences, i.e., the different kinds of junctures, a perfective verb can express taking junctures as critical moments corresponding to the boundaries of a verb.

By now we have seen that both features 'totality' and 'boundary' are typically found in definitions of Russian aspect. The totality definition has the advantage that it reflects the intuitive impression one gets of the perfective aspect very adequately. However, it has the disadvantage that it cannot easily relate to the Aktionsart of the verbs. The boundary definition is very abstract, but remedies the deficit of the 'totality' approach. Let us now take a closer look at the theoretical status of these features.

2.3 Status of the features [+/- totality] and [+/- boundary]

Now, the question arises whether the two features, [+/- totality] and [+/- boundary], are theoretically on the same level, or whether perhaps one can be derived from the other. Rassudova (1984: 13) claims that in all cases where totality (integral action in her terminology) is involved, boundaries (demarcation in her terminology) are involved as well. Thus, according to Rassudova totality can be derived from the feature 'boundaries'. The reasoning adapted in this dissertation goes along similar

lines. As already mentioned before, not all perfective verbs can be equally well subsumed under the term 'totality'. For ingressives (verbs denoting the beginning of an action) the feature 'totality' does not apply as well as for telics (verbs denoting a goal or result in their semantics), delimitatives (verbs denoting a limited time span) or semelfactives (punctual verbs). Thus, it seems that the basic features are boundaries as selected or highlighted in the verb's semantics; at least a definition involving boundaries seems to be more precise and apt to interact with Aktionsarten than a definition based on the feature 'totality'.

All these approaches have been recently criticized by Klein (1995). His arguments against these approaches, however, are based on a misconception. He claims that it is commonly assumed that the imperfective aspect cannot take the meaning of the perfective aspect (p. 673). This clearly does not hold. In fact, the binary opposition of imperfective/perfective has in nearly all aspectual studies been taken to be privative, and hence the imperfective aspect can of course take the meaning of the perfective aspect. The rest of his arguments can be reduced to the criticism that the two approaches are metaphorical and hence not precise and clear. His theory is based on the terms 0-state (states without beginning or end), 1-state (states which usually have a beginning or an end) and 2-state contents (include two states, first in which a certain state holds and then its negative counterpart). These concepts, which relate to world knowledge cannot be assessed by formal linguistic tests. Aspect is said to operate on verbs as they express these concepts. However, it is not obvious why the terms '1-state' and '2-state events' should be any less metaphorical than the terms applied in the approaches he criticizes. Further, it is not clear at all why a verb like *dočítat^p* 'read to the end' should have two states in its semantics and not a boundary denoted by the prefix *do-*. It might be that Klein's terms lend themselves to a more precise mathematical or logical interpretation. However, it is not clear at all whether a mathematical metalanguage has any superior value or is any clearer than metaphors. This is a dispute that has to be resolved elsewhere.

Another, more radical critique of traditional approaches has been brought forward by Galton (1976) and Chatterjee (1988). Both researchers reject the concept

of a binary opposition altogether. However, even though Galton polemicizes about a "binary hocus-pocus," he still assumes that the perfective aspect has an "invariant function (in Jakobson's meaning of the term)" (Galton 1976: 12). Jakobson, however, never talked about an invariant function, but about *Gesamtbedeutung* or *Allgemeine Bedeutung* (invariant meaning). The term 'invariant function' would be a contradiction in itself in Jakobsonian structuralism, since functions correspond to what Jakobson (1932, 1936) called *Nebenbedeutungen* or *Einzelbedeutung* (partial meaning) and derive from the interaction of invariant meanings and the discourse context. Chatterjee (1988) not only denies that aspect in Russian is a binary category, but he also denies the existence of an invariant. Neither of these researchers delivers a convincing argument why Russian aspect should not be treated as a binary category. Chatterjee's argument is based on a confusion of the concept of binarity with the concept of verbal pairs. He argues that the "the content of the so-called opposition pf. : ifp. can vary from case to case...". His example to illustrate this point is:

"one can say in Russian *on ugovarival menja, no ne ugovoril*, 'he was (trying to) persuade me, but did not, ' but not **on videl menja, no ne uvidel*, 'he saw me, but did not'."

(Chatterjee 1988: 31).

First, a comment on Chatterjee's translation of these two sentences. The sentence **on videl menja, no ne uvidel* cannot be translated as 'he saw me, but did not'. It is not quite clear how one could translate this ungrammatical sentence, but this translation is misleading. The same holds for *on ugovarival menja, no ne ugovoril*. This sentence would best be translated with 'he was trying to persuade me, but didn't persuade me, or didn't manage to persuade me. Second, the difference in grammaticality has something to do with pairedness and different types of pairs rather than with binarity itself. The conative function of verbs includes the factor of volition for the explanation of certain aspectual behavior (Chaput 1985). Since neither *videt*ⁱ 'see' nor *uvidet*^p 'detect' in contrast to *ugovarivat*ⁱ/*ugovorit*^p 'persuade' are volitional, they cannot be used in the conative function.

Both the imperfective verb form *ugovarivatⁱ* and the perfective verb form *ugovorit^p* are telic in their Aktionsart and have identical semantics, i.e., 'persuade'. They form what is known in Russian linguistics as a pair. The imperfective verb form *videtⁱ* 'see' on the other hand is atelic, i.e., it does not include a goal or results in its semantics, whereas the perfective verb form *uvidet^p* is telic. These two verb forms with their different semantics and Aktionsart do not form a pair on the same level as the other pair with its identical semantics and thus identical Aktionsart. Chatterjee is right in his observation that these two pairs differ in their behavior; however, this is a question of pairedness and has nothing to do with the fact that every verb in Russian is part of the binary opposition: imperfective-perfective.

3. Semantic definition of the perfective aspect used in this study

Before we take up the question of what an invariant implies for a language acquisition approach, we need to address the question of how we can test whether the Gesamtbedeutung has relevance for the adult native speaker.

One can argue on a theoretical basis that the assumption of a Gesamtbedeutung is a prerequisite for explaining certain linguistic facts we encounter. The theoretical argument looks as follows: if we assume that there is no Gesamtbedeutung of either the perfective or imperfective aspect, we would have to explain why all imperfective verbs on the one hand, and all perfective verbs, on the other hand, behave the same in various grammatical situations. First, only imperfective verbs can combine with the auxiliary *byt'* 'be' in the analytic future construction, e.g. *Kogda-nibud', ja budu čitatⁱ Annu Kareninu*. 'Sometime I will read Anna Karenina'. Second, the synthetic future tense is restricted to perfective verbs, e.g. *Ja pozvonju^p tebe*. 'I will call you'. Third, there is the syntactic restriction that only imperfective verbs combine with phase verbs. In Russian, verbs like *načinatⁱ/načat^p* 'begin', *prodolžatⁱ* 'continue' or *končatⁱ/končit^p* 'stop/finish' can only take an imperfective infinitive as a complement. If we did not assume a Gesamtbedeutung for at least one member of the opposition, it

would be very difficult to capture this fact. We would have to claim that some list of verbs simply behave in the same way, and that this has to be learned by rote, and the rationale underlying the list – i.e., the fact that they contain the semantic value [-perfective] – would go unnoticed. I take this to be a clear indication for the relevance and appropriateness of an invariant.

On a theoretical level, the present study follows the structuralist approach in assuming that there is an invariant meaning of the marked member. I use the following definition for the perfective aspect, drawing eclectically on work by Breu (1984, 1985, 1994), Bickel (1996, 1997), and Timberlake (1985a, 1985b):

The perfective aspect highlights or signals one or more boundaries of a verb (e.g. *napisat^p pis'mo* 'write a letter', or *zaplakat^p* 'start crying', or *počitat^p* 'read for a while') without taking into account whatever phase precedes or follows the boundary in the Aktionsart.

For the grammatical category perfectivity then, it is irrelevant which boundary is activated, i.e., initial as in *zaplakat^p* 'start crying', final as in *napisat^p pis'mo* 'write a letter' or both boundaries as in *počitat^p* 'read for a while'. The important point is that at least one boundary is highlighted. The type of boundary is relevant for the Aktionsart of the verb, as will be discussed below in Chapter 2. Boundary types determine, for instance, whether 'perfective' refers to a highlighted endpoint (Aktionsart with final boundaries, i.e., telic, e.g. *napisat^p* 'write up') or a highlighted starting point (Aktionsart with initial boundaries, i.e., ingressives, e.g. *zaplakat^p* 'start to cry'). The type of boundary involved also makes certain predictions of the aspectual behavior of the verb involved, e.g., whether the verb can have a semantically identical partner of the other aspect or not. These predictions will be discussed in Chapter 2.

4. The approach of this dissertation: a neo-structuralist approach

As we have seen above, there are different ways of defining aspect. Since our theory of acquisition depends in part on the definition we choose, it is important to

discuss the theoretical consequences of these definitions for a language acquisition study. The main question that arises is whether our linguistic definition has any cognitive reality for the native speaker and hence for the language learner. Is the invariant nothing else than an abstraction of the linguist, independent of any linguistic reality for the native speaker?

As stated in 3. above, it is useful from a theoretical point of view to assume an invariant, as it is done in most theories of Russian aspect. Otherwise it would be difficult to explain the identical grammatical behavior of all perfective and imperfective verbs. This makes it worthwhile to work with the hypothesis that the invariant has linguistic and therefore cognitive reality. If the *Gesamtbedeutung* is indeed cognitively represented, where does it come from?

There are two options: It is either innate or learned. If we do not want to assume a priori that it is innate, we have to work with the hypothesis that the learner extracts and learns it from the utterances s/he encounters, i.e., the child has to learn the meaning of aspect by context, analogy and abstraction, which are all general cognitive abilities. This means that the learner has to extract a common meaning or at least a common feature from the contextual functions and meanings s/he encounters.

Since the child encounters only a restricted number of contexts, with probably only a subset of contextually possible functions, the extraction of the meaning can be expected to be gradual and might go through several instances of restructuring. To find out how the invariant is acquired is the main task of this dissertation. This can only be done by studying how children understand and use aspect in different contexts. In such an investigation the different functions of aspect need to be included.

Thus, the structuralist approach needs to be complemented by pragmatics and the study of context dependent behavior of aspect (cf. Chapter 4). Such an approach is perhaps best labeled as neo-structuralist. Thus, on the one hand, on the semantic level, I work with the structuralist concept of an invariant, i.e., I investigate whether an invariant finds support in language acquisition data. On the other hand, in addition to the semantic level, I investigate the role of context in the use of aspect in discourse.

The approach is thus a synthesis of the structuralist idea and a discourse pragmatic approach. Such an approach remedies criticisms of the structuralist approach by taking the contextual functions and usages of aspect into account. I will mainly discuss two factors that might serve as a bootstrapping device for the invariant: Aktionsart and morphological marking. However, before embarking on the empirical study of this dissertation, I discuss these factors from a theoretical point of view to show how they relate to the aspect system.

Chapter 2: Aktionsarten

1. Introduction

The term 'Aktionsart' has long been used in Slavic linguistics to encompass an array of different phenomena. The recognition of Aktionsarten in the modern sense has brought a paradigm change in the study of Russian aspect. Before Aktionsarten were recognized it was assumed that Russian has several aspects, as shown, for instance, in Leskien's work. Leskien (1905/1955) used the term to refer to the categories perfective, imperfective and iterative. This usage is obsolete by now. Only with the disentanglement of grammatical aspect and lexical Aktionsarten did modern aspectology begin.

The term 'Aktionsart' was introduced by Agrell (1908) who studied the Polish verb system. Agrell denoted by 'Aktionsart' the semantic modification of a base verb. Some researchers, e.g., Isačenko (1962) and Townsend (1975) use the term exclusively for semantic classes derived by morphological modifications of a base verb. In such a modification the basic meaning of the base verb remains unaltered and a prefix, a suffix or other alternation adds a mere temporal or modal nuance.¹ Isačenko includes a wide array of semantic categories not restricted to temporal modifications, but embracing a large number of lexical modifications including such nuances as the intensity of a process, etc. Such a narrow use of the term has the consequence that "die große Mehrzahl der russischen Verben steht außerhalb der Aktionsarten." (Isačenko 1962: 387).

Maslov (1948), in contrast to Isačenko, has a broader understanding of the term 'Aktionsart'. He does not restrict the term 'Aktionsart' to modification of a base verb. His definition is the following:

¹ Forsyth (1970) uses the same definition, but uses the term procedurals.

V nastojaščee vremja sposoby dejstvija mogu byt' opredeleny kak nekotorye obščie (často, no ne objazatel'no vyražennye slovoobrazovatel'nymi sredstvami) osobennosty leksičeskogo značenija tex ili inyx glagolov, odnosjaščiesja k protekaniju dejstvija etix glagolov vo vremeni i projavljajuščiesja v obščix osobennostjax ix funkcionirovanija v jazyke, imenno po linii slovoobrazovatel'noj aktivnosti, vida i sintaksičeskogo upotreblenija. ('Nowadays Aktionsarten can be defined as some general features (which are often, though not necessarily expressed by derivational means) of the lexical meaning of verbs which are related to the flow of action through time as expressed by these verbs, and which are manifested by the general ways of their functioning in language, especially in word formation, aspect and syntactic usage pattern.')

(Maslov 1948: 12)

This understanding of Aktionsart (Russ. *sposoby dejstvija*) as a temporal classification of verbs corresponds to what is known elsewhere as time schema or lexical classes of verbs.

One of the most influential temporal categorizations of verbs is Vendler's (1967) classification of time schemata. Vendler's classification has been widely used in aspect studies and is often assumed to be universally applicable (e.g., Van Valin and LaPolla 1997). Many studies of Slavic aspect (e.g., Padučeva 1990), and also studies of the acquisition of aspect (Weist, *et al.* 1984) assume the Vendlerian classification of time schemata without questioning.

Vendler (1967) distinguishes four time schemata: states, activities, accomplishments, and achievements. For each category Vendler introduced a specific test, valid for English. Processes or activities (e.g., running) and accomplishments (e.g., drawing a circle) are singled out because the progressive aspect can be used with them. This puts them into opposition with states, achievements and accomplishments. However, they differ in their implications. If someone is running and he stops, we still can say that he ran and this is true for all the increments of time in question. In contrast, if someone was in the process of drawing a circle and he stops, we cannot say that he drew a circle, before the result was actually accomplished (hence the term accomplishment). States and achievements cannot take the continuous aspect and they differ from each other as to whether they can be predicated for only a single moment

(achievements, e.g. reaching the top of a hill), or whether their predication is possibly true for a longer increment of time. Achievements answer the question *at what time?*, whereas states answer the question: 'For how long?' (Vendler 1967: 102). Further, when achievements are used in the present tense, they usually express the historical present, as illustrated by Vendler in: "Now he finds the treasure." (p.103) which cannot mean that he finds the treasure right at that minute. The appropriateness to answer questions like *for how long?* distinguishes states from achievements, and the lack of a continuous form distinguishes states from activities and achievements. These tests show that there are valid linguistic reasons to classify English verbs in the categories proposed by Vendler.

However, Vendler explicitly stated that these categories were neither claimed to represent all possible ways in which verbs can be classified with respect to time determination nor that a verb exhibiting a use fairly covered by one schema cannot have divergent uses..." (Vendler 1967: 98). This caveat has been largely ignored and the classification has been used for an array of languages without being modified.

As observed by Timberlake (1985: 35) there are problems both on theoretical and descriptive levels with this classification. On the theoretical level, such a classification does not provide a motivation for the interaction of time schemata and aspect. On the descriptive level, Timberlake emphasizes what Vendler had admitted himself, namely that not every verb can be clearly categorized into a single category. This criticism shows that it would be premature to assume a classification to be universally valid, which was intended for the English verb only. Vendler in fact never meant this classification to be universally valid.

Let us now turn to the Slavic languages, and look at whether it can be applied for Russian. It turns out that the classification is insufficient for Russian, because there are verbs that do not fit into the classification. It is not clear, for example, how delimitatives such as *počitat^p* 'read for certain while' can be categorized: they neither qualify as achievements nor as accomplishments. This means that the classification as it stands does not even hold for a relatively close relative within the same language family. It seems that we need either to elaborate Vendler's classes, or take a different

classification to account for the Russian verbal system. Since an ad hoc elaboration for other languages than English would lead to a rather unwieldy system and certainly would not lead to a universally valid classification, we should try to find another way of classifying verbs without aiming at an exhaustive enumeration of all possible classes in all possible languages.

The main important achievement of Vendler's classification is his systematic application of linguistic tests for this type of verbal classification. Most other Aktionsart classifications suffer from their intuitive character. These classifications often do not give any criteria, for classifying a certain verb in one category, rather than another, and new categories are usually introduced ad hoc. This is a serious deficit and Vendler's categorization was the first to overcome this shortcoming systematically. To escape arbitrariness, the main important factor for an Aktionsart classification are linguistic tests as developed by Vendler (1967) and earlier by Garey (1957).

However, the theoretical and descriptive problems noted by Timberlake are serious and therefore, rather than assuming a predefined typology of Aktionsarten, I propose a typologically more cautious approach. Timberlake raised the important point that a typology needs to be motivated, in having the same notions on the levels of Aktionsart (his lexical aspect) and aspect (his configurational aspect) (Timberlake 1985: 35). A similar point has been formulated by Bickel in his *Aspectual Uniformity Hypothesis*, which states:

Aspect and Aktionsart representations have the same format, and this format is the same on all levels of meaning composition (lexical semantics, morphological derivation, sentential semantics, and pragmatic enhancement).

(Bickel 1996 : 17).

These requirements have been incorporated in the approach taken in this dissertation. For the present study only strictly temporal Aktionsarten are of interest. Further, I assume that every verb belongs to one Aktionsart, independent of whether it is a simplex verb or a morphologically derived verb. One of the major points of

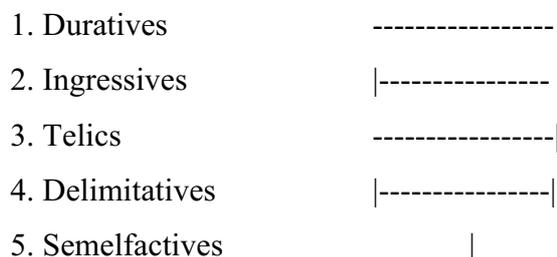
disagreement in studies of Aktionsart is whether a verb has a basic Aktionsart or whether its realized arguments and the surrounding context determine the Aktionsart. I maintain that there is a basic Aktionsart, which is determined by several tests. The Aktionsart which I consider to be basic is the Aktionsart of the verb with a minimum of realized arguments.

Instead of assuming a fixed number of Aktionsarten which should be universally valid, it seems to be more appropriate to assume a set of primitives, namely boundaries and phases, the combination of which allows for language-specific definitions of Aktionsarten (Bickel 1996). In such an account, verbs like *počitat^p* 'to read for a while' do not pose any difficulties. They can be characterized as having a phase embraced by two boundaries, but this will be shown below in the Aktionsart classification I propose for Russian. If it holds true that these primitives, i.e., phases and boundaries, are the same on all levels of aspect-related operations (grammar and lexicon, semantics and pragmatics), one might expect these primitives to also provide a cognitive starting-point for the child, equipping her with initial notions on which to construct Aktionsarten.

2. Aktionsarten in Russian

In Russian, five temporal Aktionsarten need to be distinguished: duratives (simple activities and states), ingressives, delimitatives, semelfactives, and telics. These five Aktionsarten are distinguished by their behavior with respect to boundaries: duratives have no boundary at all, e.g. *dumatⁿ* 'think'; ingressives have an initial boundary, e.g., *zasmekat'sja^p* 'start laughing'; telics include a final boundary, e.g., *umeret^p* 'die' or *dočitat^p* 'read to the end'; delimitatives include both boundaries, e.g. *poplakat^p* 'cry for a while'; and semelfactives are punctual (i.e., the boundary is initial and final at the same time), e.g., *prygnut^p* 'jump up once'. Figure 2.1 gives a schematic characterization of the boundary behavior of Russian Aktionsarten.

Figure 2.1: Schematic representation of Aktionsarten



This Aktionsart classification is the result of three temporal tests in summarized in Table 2. 1.

Table 2.1 Aktionsart classification of Russian

	Duratives (e.g. <i>čítatⁱ</i> 'read')	Ingressives (e.g. <i>zaplakat^p</i> 'start crying')	Delimitatives (e.g. <i>počítat^p</i> 'read for a certain time)	Semelfactives (e.g. <i>prygnut^p</i> 'jump one time')	Telics (e.g. <i>napisat^p</i> <i>pis'mo</i> 'write a letter')
1. Time Adverbial Test	no	no	no	no	yes
2. Temporal Presupposition Test	d.n.a.	no	yes	no	yes
3. Unlimited Interpretation Test	yes	yes	no	no	no

Test 1 assesses a property distinguishing telic Aktionsarten from all other Aktionsarten. Only with telic verbs is it possible to use the adverbial modification *za čas* 'in an hour'. So one can say (1a), but not (1b):

- (1) a. *Ona perepisala^p pis'mo za čas.*
'She copied the letter in an hour.'
- b. **Ona zaplakala^p za čas.*
'She began to cry in an hour.'

Test 2 tests whether there is a difference in the temporal presuppositions of the simple verb across the different Aktionsarten, e.g., whether the event referred to in the a-sentences of (2) and (3) necessarily presupposes that the event described in the b-sentences happened before any boundary denoted by the a-sentence is reached.

- (2) a. *Ona pročetala^p knihu.*
'She read the book.'
- b. *Ona četalaⁱ knihu.*
'She read a book.' or 'She was reading a/the book.'
- (3) a. *Ona počítala^p.*
'She read for a while.'
- b. *Ona četalaⁱ.*
'She read.' or 'She was reading.'

This is true for telic (2) and delimitative (3) verbs, but it is not true for ingressives (4) and semelfactives (5). The a-sentences do not temporally presuppose the b-sentences in these cases:

- (4) a. *Ona zaplakala^p.*
'She started crying/burst out in tears.'
- b. *Ona plakalaⁱ.*
'She cried.' or 'She was crying.'
- (5) a. *Ona prygnula^p.*
'She jumped once.'
- b. *Ona prygalaⁱ.*
'She jumped.' or 'She was jumping.'

The test does not apply ('d.n.a.' in Table 2.1) to duratives because they do not denote a boundary to begin with. Test 3 checks whether a past perfective form can be asserted

at the moment of utterance, e.g., whether it is possible to say sentences like the ones in (6) while talking about one and the same events.

- (6) a. *Ona zaplakala^p i ešče plačetⁱ.*
'She started crying and she is still crying.'
- b. *Ona čitalaⁱ i ešče čitaetⁱ.*
'She read and she is still reading.'

This test is met only by ingressives (6a) and duratives (6b). Telics (7a), delimitatives (7b) and semelfactives (7c), in contrast, exclude an interpretation of past perfective forms as holding true at the moment of utterance. They are therefore in contradiction with the truth values of present imperfective forms of the same verb claimed for the same event (the sentences are of course well formed if they refer to different events):

- (7) a. **Ona napisala^p pis'mo i ešče pišetⁱ ego.*
'*She wrote the letter and is still writing it.'
- b. **Ona počitala^p knigu i ešče čitaetⁱ ee.*
'*She read the book and is still reading it.'
- c. **Ona prignula^p i ešče prigaetⁱ.*
'*She jumped once and is still jumping'

These three tests show that we can at least distinguish between five temporal Aktionsarten in Russian. Whether there is a more finegrained distinction possible is outside the scope of this dissertation. The Aktionsart classification presented above is sufficient for the purposes of this study. In the following I focus on the telic Aktionsart and its semantic counterpart the ingressive Aktionsart in more detail. These two Aktionsarten will be of especial importance in Part II, the empirical part of this dissertation.

2.1 The telic Aktionsart

The telic Aktionsart has a special status in the Russian aspect system. Following a strict definition of aspectual pairs – which requires complete semantic identity of the two partners – the telic Aktionsart is the only Aktionsart which forms tight pairs of an imperfective and a perfective verb form. The telic Aktionsart includes as the term suggests, a *telos*, i.e., the result or the goal of an action, e.g. *umiratⁱ/umeret^p* 'die'. This *telos* is part of the verb semantics. Semantic identity of the two partners implies that the *telos* of the action must be present in the semantics of both the perfective and the imperfective verb forms.

Morphologically, telic pairs can be marked by prefixes and/or a suffix, e.g., *razdavatⁱ/razdat^p* 'distribute', suppletion e.g. *bratⁱ/vzjat^p* 'take', or stem alternation *razdražatⁱ/razdražit^p* 'irritate'. If they have a prefix, it can be opaque to various degrees. The prefix, *u-* 'away' (in this context) in, for instance, *ubegatⁱ/ubežat^p* 'run away' is quite transparent semantically, whereas the same prefix *u-* in *umiratⁱ/umeret^p* 'die' is not transparent any more and there is no longer an independent base verb **miratⁱ/meret^p* with an independent meaning; *u-* in this case is recognized as a prefix only historically.

2.2 The ingressive Aktionsart

There are two types of ingressives in Russian, which I call synthetic ingressives and analytic ingressives.

2.2.1 Synthetic ingressives

Synthetic ingressives in Russian are chiefly associated with the prefix *za-*, e.g. *zaplakat^p* 'start crying', *zakričat^p* 'start shouting', etc.¹ Semantically these verbs denote the beginning of an event, and this beginning is in most cases punctual. The

¹ There are some other prefixes like *po-* and *u-* that indicate ingressivity, but in this dissertation I will concentrate on *za-* verbs, which are the most common ingressives.

prefix *za-* is polysemous and there are other meanings of the prefix *za-* which have nothing to do with ingressivity. The prefix *za-* can either be semantically vacuous (empty prefix) as in *gipnotizirovatⁱ/zagipnotizirovat^p* 'hypnotize', or it can denote the intensity of an action as in *zagovarivatⁱ/zagovorit^p* 'talk someone's head off'. It can even denote telicity as in *zaglušatⁱ/zaglušit^p* 'deaden, drown'. Another meaning of this prefix is 'direction into', e.g., *zagonjatⁱ/zagnat^p* 'chase into'. Further, there are some specific uses such as in *zaxoditⁱ/zaiti^p* 'visit someone for a short time, step by'. These are only some examples of the meaning *za-*, illustrating the challenge that such a polysemous prefix poses for children.

In its ingressive meaning the prefix *za-* combines with a number of simplex durative verbs. These new perfective verbs usually do not take the imperfective suffix *-yv*. Adding the prefix *za-* to such a simplex verb renders the verb perfective and changes the meaning, i.e., it introduces an initial boundary to the event described by the simplex verb. Imperfective simplex verbs are usually activity or state verbs, i.e., duratives in my terminology. Duratives are the only Aktionsart compatible with the ingressive prefix *za-*.

The combination of the prefix *za-* and the simplex verb is compositional, i.e., by subtracting the prefix *za-*, one gets a simplex imperfective verb, usually with a very general meaning. There are very few instances of what is traditionally known as secondary imperfectives, i.e., imperfectives derived from *za-*verbs by a suffix. I classify these verbs as inchoatives (denoting a processual beginning), e.g., *zabolevatⁱ/zabolet^p* 'get sick, become ill'. They probably constitute a subgroup of telics. In contrast to *inchoatives*, the combination of a simplex verb with a *za-*verb does not constitute a clear aspectual pair, because there is nothing in the semantics of the simplex imperfective verb that indicates the beginning of the event. Thus, in a strict sense of the term 'aspectual pair', these ingressive verbs are mono-aspectual, i.e., perfectives. This is a qualitative difference to telic verbs, which usually have a perfective and an imperfective partner. In contrast to telics, the boundary in ingressives is newly introduced, and thus not inherent in the verb semantics of the base verb.

Synthetic ingressives have severe lexical restrictions. Not every durative verb can be combined with the prefix *za-*. So far we do not have an explanation why (8) and (9) are grammatical whereas (10) is not.

(8) *Mal'čik zaplaka^P*.
'The boy started to cry/bursted out in tears.'

(9) *Mal'čik zabarabany^P*.
'The boy started/began to drum.'

(10) **Mal'čik zatanceva^P*.
'The boy started/began to dance.'

The restrictions on the combinability still need to be worked on. We do not know yet whether there is a pattern. What we do know is that the prefix *za-* is not fully productive in modern Russian, i.e., it cannot be freely combined with any given simplex verb.

It seems that these different restrictions make synthetic ingressives for children rather difficult to learn. The child has to cope with a prefix that is not only highly polysemous but also lexically restricted if used with an ingressive meaning. Thus, children either have to learn by rote which simplex verbs can take the ingressive prefix *za-* and which verbs cannot, or they have to learn these verbs as independent lexical items. Further, in the vast majority of cases these verbs do not have an imperfective partner. This entails that these verbs rarely come in the present tense. Analytic ingressives in contrast seem to be much simpler in several respects.

2.2.2 Analytic ingressives

Analytic ingressives consist of the perfective verbs *stat^P* 'become/start' or *načinatⁱ/načat^P* 'start' plus the infinitive of an imperfective verb, e.g., *on stal^P/načal^P čitat' pis'mo* 'he started to read the/a letter'. The two variants differ from each other

formally. Only the perfective auxiliary *načat'* has an imperfective counterpart; cf. (11).

- (11) *Devuška vyxodit' iz komnaty; vse načinajut' obsuždat'ⁿ, kto ona takaja.*
 'The girl left the room and everybody started to discuss who she was'
 (Comment in the transcript of a conversation, Stoll corpus)

Only in one variant of analytic ingressives, namely with the imperfective auxiliary *načinat'* 'start/begin', is there a present tense reading. In general, the analytic ingressive construction with the imperfective auxiliary *načinat'* is predominantly used to state a fact, which is one function of the imperfective aspect. The construction *načinat'ⁿ/načat'^p* + imperfective infinitive is thus more versatile than the analytic ingressive with the auxiliary *stat'*. In many contexts there seems to be no obvious semantic difference between the two perfective variants *stat'* and *načat'*, and for present purposes we can gloss over any difference that closer inspection might reveal.

The main restriction of the analytic ingressive is that the verb in the infinitive has to be imperfective. Thus, verbs of the delimitative and the semelfactive Aktionsart, as well as verbs of the synthetic ingressive Aktionsart cannot be used in this construction. Thus, analytic ingressives are restricted to the telic and durative Aktionsarten (cf. (12) and (13)).

- (12) *Pervyj innovacionnyj bank tol'ko čto načal^p rabotat'ⁿ v Leningrade.*
 'The first innovative bank just began their work in Leningrad.'
 (Uppsala Corpus, *Jabloki na silos*. "Pravda", 88-09-07)
- (13) *Potom on stal^p zaščičat'^{sja} dovol'no dobrodušno.*
 'Afterwards he started to defend himself in a rather good natured way.'
 (Uppsala Corpus, Trifonov, Ju., *Drugaja žizn'*, v kn. "Sobranie sočinenij v 4-x tomach", t. 2., M., 1986, 219-234)

There are a few apparent lexical restrictions, i.e., there are some imperfective verbs that are judged incompatible with this construction. These are mostly idiomatic constructions that would fit according to their Aktionsart but that the linguistic norms bans. Such constructions, however, do occur in the spoken language (cf. (14)). An

example is *stat^p zakatyvat'sjaⁱ* 'start set of the sun' which the norm qualifies as ungrammatical.

- (14) *Tem vremenem solnce uže stalo^p zakatyvat'sjaⁱ.*
 'At that time the sun already started to set'.
 (Lena 25 years, narrative).

Further, whereas synthetic ingressives are punctual, analytic ingressives are not necessarily punctual. They can be combined with adverbs that are otherwise reserved to imperfective verbs. This makes analytic ingressives a hybrid category between perfective and imperfective aspect:

- (15) *Ona medlenno načala^p umiratⁱ.*
 'She slowly started to die.'
- (16) **Ona medlenno umerla^p.*
 'She died slowly.'
- (17) *Ona medlenno umiralaⁱ.*
 'She was dying slowly.'

The main difference between the synthetic and analytic construction lies in their range of applicability. The synthetic construction is very restricted. There is only a relatively small number of such synthetic verbs, i.e., the construction is not productive and several lexical restrictions apply. The analytic construction, in contrast, is productive and lexically less restricted. The only constraint is that the infinitive complement is imperfective. Further, synthetic ingressives are in the majority of cases punctual and do not have an imperfective partner with the exact same semantics. In contrast to the synthetic construction, the analytic construction can either focus on a punctual beginning of an event or on a more extended beginning that leads into the event stated by the imperfective infinitive. Unlike synthetic ingressives, its marking is semantically straightforward and there is no polysemy involved.

3. Systemic and communicative status of Russian Aktionsarten

It is common in the literature to distinguish between telic and atelic Aktionsarten. On first sight it seems to be questionable why the telic Aktionsart should be assigned such a prominent status, whereas all the other Aktionsarten are subsumed under the heading atelic. However, the telic Aktionsart indeed occupies a prominent place in thinking and speaking. Usually, we are much more interested in the results and goals of actions than in the beginning of an action or the time duration of an action. The prominent place of the telic Aktionsart is also reflected in the Russian aspect system. As we saw earlier, only telic verbs come in tight pairs, i.e., in pairs where the semantic and also the argument structure of the two partners is the same. Even though the telic Aktionsart is compatible with the perfective and the imperfective aspect, there seems to be strong preference for telic verbs to appear in the perfective aspect.

All other Aktionsarten are monoaspectual, i.e., they are either perfective or imperfective. Thus, by knowing the Aktionsart of an atelic verb, we automatically know the aspect. Duratives are always imperfective and do not have a perfective partner. Ingressives are usually perfective, and only very few of them have a semantically synonymous imperfective partner. Delimitatives are always perfective, and if they have an imperfective partner, it usually has an iterative meaning. Semelfactives are always perfective.

Duratives and telic verbs take probably the most important role in human communication. Telics transmit goals and results and duratives subsume actions and states. Duratives are semantically very unspecific and can occur in a wide range of contexts always meaning something slightly different. This is not true for the other Aktionsarten. They are very specific in meaning and except for the telic Aktionsart, they are very restricted to specific contexts. This is summarized in the *Hypothesis of contextual relativity of Aktionsarten*:

Hypothesis of contextual relativity of aspect and Aktionsart:

The occurrence and frequency of Aktionsart and aspect depends on the context.

This hypothesis states that the frequency of Aktionsarten and also aspect is context-dependent. The telic and durative Aktionsarten are presumably dominant in most if not all contexts. It is hardly imaginable to have a conversation or a text with semelfactives, ingressives and delimitatives as the predominant Aktionsarten. This leads us to the more specific hypothesis that duratives and telics are easiest for children of all age groups.

Chapter 3: The Morphology of Russian Aspect

1. Introduction

Before I discuss which markers the child actually has to learn, and how they are associated with the two aspects, there are two preliminary questions which deserve some discussion.

1. Is Russian aspect a grammatical or a lexical category?
2. If aspect is grammatical, is it an inflectional or derivational category?

These are not only important linguistic questions in their own right, but our answers to them also have important consequences for the language acquisition study in Part II. It is likely that the acquisition process is different for lexical and grammatical categories, or at least we cannot assume a priori that lexical and grammatical categories are acquired the same way. Therefore, our answer to the questions above in part determines our general approach to the acquisition process.

Question 1 can be answered indirectly, by determining whether aspect is an inflectional or a derivational category. If we can show that it is either inflectional or derivational, we also have shown that it is a grammatical category. If it were neither inflectional nor derivational, aspect would simply be an idiosyncratic property of individual verbal lexemes.

2. Russian aspect: inflectional or derivational?

Opinions differ whether Russian aspect is to be treated as an inflectional or a derivational category.

Whereas most linguists more or less confidently prefer to categorize Russian aspect as a derivational category (Karcevski 1927, Růžicka 1952, Dahl 1985, Bermel 1997) only very few claim aspect to be an inflectional category (e.g. Isačenko 1962, Bickel and Nichols in press).

In general, there seems to be considerable confusion of what is meant by 'derivation' and 'inflection', and what these terms refer to. As pointed out by Anderson (1992), the terms inflection and derivation are most often not properly defined, and hence it is often difficult to decide according to which criteria a category is said to be inflectional or derivational. This also applies to Russian aspectology: researchers rather state their position on this question and refer to the tradition without giving arguments for their decision. But, we need to give reasons for our decision.

There are two types of criteria that establish Russian aspect as an inflectional category. One criterion is syntactic and the other is based on paradigm structure rules. I first concentrate on the syntactic criterion.

The syntactic criterion goes back to Anderson's definition of inflection:

'Inflection' thus seems to be just the morphology that is accessible to and/or manipulated by the rules of syntax.

(Anderson 1992: 83).

This criterion qualifies Russian aspect as inflectional. Constructions with *načínatⁱ/načat^{IP}*, *stat'* 'begin, become' *prodožžatⁱ* 'continue', *končatⁱ/končit^{IP}* 'finish, stop' require an infinitive in the imperfective aspect as illustrated in (1)

- (1) *On načal^{IP} čitatⁱ knigu.*
'He began to read a/the book.'
- (2) **On načal^{IP} pročitat^{IP} knigu.*
'He began to read a/the book.'

The perfective aspect is ungrammatical in this type of construction. Thus, the syntactic subcategorization rules of these constructions refer to aspect. The rule requiring imperfective aspect is unambiguously syntactic in nature, and cannot be derived from the semantics of the verbs involved. Therefore, Russian aspect is unambiguously inflectional in Anderson's sense.

A second argument for the inflectional character of Russian aspect comes from the following paradigm structure rules.¹

1. Only imperfective verbs can assume a present tense reading.
2. Only imperfective verbs can form an analytic future tense.
3. Only perfective verbs can form a synthetic future tense.

First, the inflection of the imperfective and the perfective aspect is the same. However, in what is called the present tense inflection, they render a different reading. Only the imperfective aspect can have a present tense reading, as in (3).

- (3) *On pišet' pis'mo.*
'He is writing a letter.'

The present tense inflection of perfective verbs renders a future reading:

- (4) *On napišet' pis'mo.*
'He will write a letter.'

To get a future tense reading with an imperfective aspect, there is an analytic construction with the inflected auxiliary *byt'* 'be'.

- (5) *On budet pisat' pis'mo.*
'He will write a letter.'

¹ For the general use of paradigm structure rules as a criterion distinguishing between inflectional and derivational categories see Bickel and Nichols (in press).

On the one hand, as illustrated in (3) and (4) we have the same inflection for the perfective and imperfective aspect, but we get a different reading depending on aspect. Verbs in the imperfective aspect in the present tense ending render a present tense reading. Perfective verbs with the same ending render a future tense reading. On the other hand, depending on aspect we have two different inflections for the future tense. The future tense from imperfective verbs is formed by an analytic construction with the auxiliary *byt'* 'be' (cf. (5)). The perfective aspect renders the future tense with the present tense ending (cf. (4)). These paradigm structure rules clearly justify to classify Russian aspect as inflectional.

To sum up: according to the syntactic and paradigm criteria Russian aspect is clearly an inflectional category. This shows at the same time that Russian aspect is a grammatical category. Thus, the category whose acquisition is investigated in Part II is a grammatical category and not a lexical one.

This, of course, does not mean that the lexicon is irrelevant for Russian aspect. On the contrary, the lexicon plays an important role for the derivation of new Aktionsarten from a simplex verb.

The reason for this interrelation of aspect with the lexicon is the hybrid character of aspectual markers. Prefixes have a double function in Russian. On the one hand, they play a crucial role in the derivation of new verbs, i.e., the prefixes add a meaning to the simplex verb they are attached to.

*stroit*ⁱ 'build' → *ustroit*^p 'arrange'

On the other hand, prefixation of a simplex verb results in a perfective verb, i.e., the prefix changes the aspect of the verb. In a sense, then, prefixation is derivational and inflectional at once. However, there is another process of deriving a new aspectual form and this is by imperfectivization a derived prefixed verb. This process is purely inflectional.

*ustroit*ⁱ → *ustraivat*ⁱ 'arrange'

In Slavic linguistics this process is called secondary imperfectivization.

The hybrid character of these prefixes is probably also the reason why there is at all a dispute about whether we deal with a lexical or grammatical category. Even though it is true, as Forsyth states, that "the perfectivity of a prefixed verb is ... basically no more than the by-product of the word-building process..." (Forsyth 1970: 30) this does not change the inflectional character of Russian aspect.

As we have seen, Russian aspect is unquestionably very much interwoven with lexical derivation, and to get a comprehensive picture of Russian aspect one has to take this fact into account.

Thus children have to learn this double function of prefixes (meaning change of the base verb and perfectivization), and it might very well be that the interrelation of these two functions actually helps them to acquire this rather complicated system.

3. Morphological markers of Russian aspect

There are basically three possibilities how aspect can be expressed:

1. There is no dedicated marker for aspect.
2. There is a dedicated marker for aspect .
3. There is a combined, hybrid marker, which has an additional function beyond marking aspect.

Russian has all three possible marking types. The first option, where aspect is not coded by a specific marker, is very widespread. All simplex verbs, e.g. *dumatⁱ* 'think' and all suppletive pairs belong to this category, e.g. *bratⁱ/vzjat^p* 'take'. The absence of a marker gives, however, no clear clue whether the verb is perfective or imperfective, even though most verbs that belong to this group are imperfective.

Second, aspect can be marked with a specific aspectual marker. There is only one suffix which marks aspect and nothing else, namely the suffix *-yv-* and its allomorphs

which are used to form secondary imperfectives, e.g. in *opis-yv-at'* 'describe'. Further, we have stem alternations as in *končat'*/*končit'* 'end/finish'.

The third option, where aspect is marked by a portmanteau morph, is very widespread. Most of the prefixes fall under this category e.g., *za-plakat'* 'start to cry/burst out in tears'. The stem '*plakat'*' itself just means 'cry', whereas the prefix adds the meaning of inception and at the same time changes the aspect from imperfective to perfective. As already mentioned they contain a meaning component, which alters the Aktionsart of the corresponding simplex verb and in addition, their mere presence renders the verb perfective.

One reason why the analysis of Russian aspect is so complicated is the absence of a single morphological feature that indicates the aspect of a given verb. This also makes aspect potentially difficult for the language learner, whose first task is to decode and encode the aspect of a given verb. Before we discuss the acquisition of aspect let us briefly summarize how the situation looks for the adult native speaker.

How does a native speaker for instance know just by analyzing the morphology that *dumat'* 'think' is imperfective, but *dat'* 'give' is perfective. How does s/he recognize that *vorozit'* 'tell fortunes' is imperfective, but *borotit'* 'turn/give back' is perfective, *brosat'* 'throw' is imperfective, but *brosit'* 'throw' is perfective, *podumat'* 'think for a certain while' is perfective, but *polučat'* 'receive' is imperfective?

There is a set of rules a native speaker could form about aspectual coding and it might be that these rules represent actual decoding strategies. In the following, I formulate the major rules of aspect formation in Russian. As we will see, however, none of these rules is without exceptions.

Rule 1: If a verb has one of the suffixes {-iv}, {-a/-aj}, {-va/-vaj} or {-iva/-ivaj}, then the verb must be imperfective.

Rule 2: If a verb has a prefix, then the verb is perfective.

Rule 1 and 2 are ordered in a hierarchy, so that in case of conflict, Rule 1 overrides Rule 2. If we take, e.g., the verb *pere-pis-at'* 'copy', we realize that the verb has a prefix, namely *pere-*, and hence by Rule 2, we know that it is a perfective verb. If we

consider now the verb form *pere-pis-yv-at'* 'copy' we could decide by Rule 2 that it is perfective, since however, the suffix *-yv-* is present as well, and Rule 1 overrides Rule 2, we know that the verb is imperfective (*-at'* is the infinitive desinence).

Rule 1 applies to most cases; exceptions are verbs with double prefixation, such as *po-vy-task-yv-at'* 'pull out', which are perfective.

Rule 2 holds true for most prefixed unsuffixed verbs, but not for all. Exceptions are a few loan-translations from other languages and some borrowings from Old Church Slavonic, e.g. *za-viset'* 'depend', *pred-videt'* 'foresee', *pred-čustvovat'* 'have a presentiment' (cf. Forsyth 1970: 18). Further, verbs like *prixodit'* 'come' and in general all prefixed motion verbs based on indeterminate motion verbs are imperfective. Thus, these verbs are exceptions to Rule 2.

Rule 3: Simplex verbs are imperfective.

Traditionally, it is assumed that most simple verbs (verbs without prefixes or suffixes) are imperfective (cf. Isačenko 1962, and most recently, Klein 1995), e.g., *čitat'* 'read' or *plakat'* 'cry'. This rule holds for the majority of simplex verbs, i.e., verbs without prefixes and suffixes. Examples of imperfective simplex verbs are *rabotat'* 'work', *pisat'* 'write', *dumat'* 'think' etc. However, the picture is more complex. There is a significant number of verbs for which this generalization does not hold. For instance, it does not hold for simplex verbs of conjugation class V ending in *-it'*, e.g. *brosit'* 'throw', *končit'* 'stop, finish'. Further, there are some irregular verbs like *dat'* 'give', *past'* 'fall', *det'* 'put, which are perfective, but simplex. Another important group are verbs that historically could be divided into prefix + stem, but in modern Russian, such a morpheme analysis is obsolete, because the stem does not exist as an independent verb anymore. Examples are: *vzjat'* 'take', *isčeznut'* 'disappear', *pojmat'* 'catch', *vstretit'* 'meet', and there are several more verbs of this type.

One might ask how such complex verbs are processed and recognized by the native speaker as either imperfective or perfective. This question is relevant for finding out how aspect is learned. It is either possible that they are processed like simplex verbs, or they are still stored as prefix plus stem, without forming a

compositional unit. It might thus be enough for a native speaker that if an element with the formal characteristics of a prefix is present to analyze the verb as perfective.

Rule 4: Verbs with the suffix -nu- are perfective

Rule 4 holds for the great majority of verbs with the suffix *-nu-*. However, there is a handful of exceptions, where this suffix does not indicate perfectivity. These exceptions are: *gnut'* 'bend', *l'nut'* 'cling', *tonut'* 'drown', *tjanut'* 'pull'. These verbs are all imperfective. One could make the generalization that verbs with the suffix *-nu-* are perfective, but then one still would have to account for these exceptions.

Considering all these rules and their exceptions, it seems that if a child were to approach aspect exclusively via morphological markers, s/he would have a difficult task to manage. It becomes clear that it would be impossible to rely on rules alone. The aspect of a great number of verbs simply has to be learned by heart. Thus, both rule and rote learning would have to be involved if the child relied exclusively on a morphological rule-based approach. Even though it certainly would be a plausible scenario that the child learns these rules and their exceptions it seems unlikely that the learner relies on morphology alone when determining the aspect of a given verb.

Rules 1-4 describe linguistically what has to be taken into account by the language learner. Whether aspectual marking is indeed learned in form of such rules is a different question.

To decode and encode aspectual forms, however, is only one part of the learner's task. There are other morphological factors that the child has to be aware of, such as the relation of tense and aspect, and this is what I take up in the following.

4. Tense and aspect combinations

The possible combination of tense and aspect results in five different finite verb forms. The full paradigm of tense/aspect combinations is shown in Table 3.1, illustrated by the verb *rasskazyvatⁱ/rasskazat^p* 'tell'.

Table 3.1: Paradigm of Russian tense/aspect combinations

	Imperfective <i>rasskzyvat'</i> 'tell'	Perfective <i>rasskazat'</i> 'tell'
future	<i>budu rasskzyvat'</i> 'I will tell'	<i>rasskažu</i> 'I will tell'
present	<i>rasskazyvaju</i> 'I tell'	—
past	<i>rasskazyvala</i> 'I told'	<i>rasskazala</i> 'I told'

Table 3.1 shows that in the present tense, there is only one aspect available, namely the imperfective, which usually describes ongoing events.¹ The same endings used with a perfective verb have future meaning. In some situations it is also possible to use the imperfective present tense to indicate immediate and 'scheduled' future meaning, as exemplified by the following phrase which can be heard at any metro stop:

- (2) *Ostorožno, dveri zakryvajutsja*.
'Careful, [or: Watch out,] the doors are closing'.

In fact, the doors are still open when this announcement is heard, but they are about to be closed.

If, however, an event takes place in the past or future, both aspects can be applied. Thus, the paradigm is not complete and a clear aspectual distinction applies only to the past and the future tenses.

To sum up: in addition to the pure recognition and formation of aspectual forms, the child has to learn which aspect can come in which tense and how these tense forms are built. This adds to the morphological complexity of aspect alone and makes the task even more demanding.

¹ This function might be called the default function of the imperfective present. The other important function of the imperfective aspect is the statement-of-fact function (russ. *obščefaktičeskoe značenie*).

5. The role of verbal pairs in Russian aspect

5.1 Theoretical status of aspectual pairs

One of the main features discussed by aspectologists working with Russian are what is called verbal pairs. Indeed, the problematic nature of Russian aspect is partly due to this feature of verbal pairs consisting of an imperfective and perfective verb form. A great number of Russian verbs have forms of both the perfective and the imperfective aspect. The main question of dispute is what can be considered to be a pair, and as shown below, our decision on this issue is to a large degree arbitrary. In the absence of a uniform morphological device marking either the perfective or the imperfective aspect, there has always been much dispute as to what counts as a pair. Recently, it has become commonly accepted to posit a criterion of synonymy. Two verbs make up a pair if and only if they differ only in aspectual value but not also in lexical meaning (see, among others, Maslov 1948, 1974, 1985, Isačenko 1962, Forsyth 1970). In such an account, each aspectual partner is considered to be one verb form rather than an independent verb (lexeme). We need, however, a criterion for deciding when two verbs are semantically identical, and how many instances of identity are required to group two verb forms together.

The first problem is the notion of 'purely aspectual value'. When is a semantic difference purely aspectual, i.e., a difference between perfective and imperfective, and when does it involve also lexical content? If we take for instance the verb forms *znat'* 'know' and *uznat'* 'come to know', is the difference between them purely aspectual or does it involve 'more' meaning difference? At first glance, there is 'more' meaning difference indeed because the perfective vs. imperfective opposition does not exhaust the inchoative vs. state opposition.

But is this claim warranted? Outside Slavic linguistics, it is precisely pairs like 'know' vs. 'come to know' that count as typical for a pure aspect distinction (Comrie 1976, Breu 1994, Sasse 1991a). In Romance languages, for instance, verbs of knowing translate as ingressives in the perfective and as states in the imperfective, cf. the Spanish *pretérito indefinido* form *supo* 's/he came to know' and the corresponding

sabía 's/he knows' in the *pretérito imperfecto*. Sasse (1991a, 1991b) and Breu (1994: 28) and claim that this meaning difference is purely aspectual and that it is due to the fact that *saper* belongs the class of what they call ingressive-stative verbs. These verbs are lexically conceptualized as referring both to the beginning of a situation and to the situation itself. Could such an analysis be extended to Russian? Could it be that *znat'* 'know' and *uznat'* 'come to know' are the imperfective and perfective realization of one and the same underlying ingressive-stative verb (cf. Townsend 1985)? At first sight, the parallelism with Spanish is indeed striking. But, there is one disturbing fact about *uznat'* that makes such an analysis problematic. In addition to *znat'*, there is another imperfective verb *uznavat'*, meaning 'come to know'. Traditionally, *uznavat'* 'come to know (imperfective)' and *uznat'* 'come to know (perfective)' are seen as the imperfective and perfective realizations of a single predicate which is, in traditional terms, 'inchoative', or, following Dowty's (1979) adaptation of Vendler (1967), a 'degree achievement'. According to the Aktionsarten tests introduced in Chapter 2 *uznavat'ⁱ* / *uznat'^p* are telic.

The pairing of *uznavat'ⁱ* with *uznat'^p* is shown by such examples as the following, cited by Timberlake (1985: 39):

- (6) *Uspokojtes', ja tol'ko čto uznaval'ⁱ.*
'Calm down, I just found out'

Using *znat'^p* in this context would make no sense. This suggests that two pairs can be identified: *znat'ⁱ* and *uznat'^p* as the aspectual variants of '(come to) know' and *uznat'^p* and *uznavat'ⁱ* 'come to know, find out, learn'. It seems to a large extent arbitrary to decide which pairing is the 'correct' one.

Maslov (1948) provided a useful test for semantic identity and hence for pairedness. He suggested that if in a narrative sequence a verb can be directly transposed from the perfective past in the imperfective historic mode of narration, without further elaboration by means of other lexical items, the two aspectual forms can be considered a pair. He gives the following example:

- (7) a. *On vstal^p, pošel^p, k oknu i otkryl^p ego.*
 'He got up, went to the window and opened it.'
- b. *On vstaneⁱ, ideⁱ ko oknu i otkryvaetⁱ ego.*
 'He gets up, goes to the window and opens it.'

As shown by this transposition from the past (7a) into the present tense (7b), *vstavatⁱ/vstat^p* 'get up', *idtiⁱ/pojti^p* 'go', and *otkryvatⁱ/otkryt^p* are aspectual pairs. A result of this semantic criterion is that verbs derived by secondary imperfectivization, e.g., *perepisat^p → perepisyvatⁱ* 'copy', and some suppletive verbs like *bratⁱ/vzjat^p* 'take' and simplex verbs with a stem alternation in *a/i*, e.g. *končatⁱ/končit^p* 'stop, finish' are considered to be true pairs. Some verbs derived by prefixation are considered to be pairs, e.g. *idtiⁱ/pojti^p* 'go', but not all. Under this account, forms like *znatⁱ/uznat^p* 'know/come to know' do not constitute a pair. As a result for this approach the main important morphological marker for aspectual pairs is the suffix *-yv-* and its allomorphs.

The derivation of aspectual pairs, which is called secondary imperfectivization, works as follows. In a first step, a prefix is added to a simplex verb, either to the perfective or imperfective simplex verb, but usually to the imperfective simplex verb e.g., *pisatⁱ* 'write' → *pere-pisat^p* 'copy'. This prefixation not only alters the meaning of the verb (to varying degrees, depending on the prefix and its combination with the simplex verb), but it also renders the verb perfective, i.e., an aspect change takes place. In a second step, another imperfective verb is derived from the newly prefixed verb, e.g., *perepisat^p → pere-pis-yv-atⁱ* 'copy'. Verbs are usually imperfectivized by means of an additional suffix and the result is a new imperfective verb form with exactly the same meaning as the derived perfective form. The only difference between these two new verb forms is their aspect. Further, all imperfective verbs derived by secondary imperfectivization belong to the first conjugation class. This also means that secondary imperfectives are the only verbs for which we automatically know which conjugation class they belong to.

Under such an account all other verbs are considered to be unpaired and thus are either imperfectiva tantum, or perfectiva tantum. There is a small subgroup of verbs

of the durative Aktionsart, whose status concerning pairedness is disputed. These are verbs with so-called empty prefixes. It is unclear whether these prefixed verb forms make up a pair with the simplex imperfective verb form e.g., *pisatⁱ/napisat^p* 'write', *delatⁱ/sdelat^p* 'make, do', i.e., whether they are indeed empty or whether they do carry some additional meaning. Isačenko (1962: 362) and Maslov (1959: 176-7), for instance, argue that these prefixes do carry an additional meaning nuance, and hence they cannot be considered to be aspectual partners of the corresponding imperfective simplex verb.

Forsyth (1970), in contrast to this strict semantic approach assumes a more usage-based approach and argues that in many contexts these verb forms behave like pure aspectual partners, i.e., they have the exact same meaning and they are used as perfective partners of the imperfective simplex verb. To decide whether two verb forms are semantically identical, Forsyth applies Maslov's test. The following example is taken from Forsyth and tests whether *čitatⁱ* and *pročitat^p* 'read' make up a pair.

- (8) a. *On podnjel pis'mo, pročitat^p ego i vzdoxnul^p.*
 b. *On podnimaetⁱ pis'mo, čitaetⁱ ego i vzdyxatⁱ.*
 'He lifted the letter, read it and sighed'.

If we accept this test as a criterion for pairedness, we have to accept that perfective verb forms with empty prefixes are valid aspectual partners of the corresponding simplex. Another argument brought forward by Forsyth (1970: 41) and others is that these prefixed verbs do not have a imperfective partner derived by secondary imperfectivization. Thus, if there was any perceptible new meaning in these forms, derived secondary imperfectives would have come into use.

An argument against the pairedness of these verb forms is that the prefixes do not only change the aspect, but they also bring about a change in argument structure. The simplex verb form usually can be used transitively and intransitively, but the perfective prefixed verb form only has a transitive reading, i.e., it is more restricted, cf. (9):

- (9) a. *Včera on pisalⁱ*.
'Yesterday he wrote'
- b. **Včera on napisal^p*.
'Yesterday he wrote'

One still could argue that only one of the lexical meanings of the simplex verb has an aspectual partner. This, however, would force us to assume several independent meanings of e.g., the verb *pisatⁱ* 'write' even though the meaning is clearly close if not identical, which would be a rather unwieldy analysis. Considering these facts, a monolithic understanding of the notion pair seems to be a theoretical artifact which does not well respond to the empirical facts

If we applied a strict semantic criterion for pairedness, we would end up with a very large group of verbs that do not take part in the system of pairs. These verbs, however, still have their position in the binary system of perfective and imperfective aspect, i.e., independent of the question of pairedness every verb is either perfective or imperfective. That is, a perfectivum tantum responds in the same way as a paired perfective to the syntactic and morphological tests discussed at the beginning of this chapter.

As we have seen, aspect as a morphological category seems to be rather heterogeneous and not all verbs have the same status with respect to pairedness, no matter which approach to pairedness we take.

Secondary imperfectivization is the only process that seems to produce pairs with identical semantics.¹ Thus, the only pure aspectual marker has an imperfectivizing function. It is used preferably with one specific semantic group of verbs, namely telic verbs. A telic verb includes a final boundary in its semantics. Since the verb is imperfective, this boundary is not activated, however. Still, the boundary is in the semantics of the verbs. What this marker does, then, is highlighting a phase before the final boundary. In other words, the boundary is still present in the meaning of the verb, but not yet reached, or at least no statement is made whether it has been

¹ The original meaning of this suffix seems to have been that of iteration. In some verbs this meaning is still present, cf. *vypivatⁱ* 'drink up repetitively', cf. Forsyth (1970: 30).

reached. This is the reason why there exist such readings as the conative reading *my dogonjaliⁱ ego... nakonec dognali^p*. 'We were catching up with him... and finally caught up with him'. (Forsyth 1970: 49). The imperfective aspect here focuses on the phase that leads to the boundary. Only the perfective aspect activates the boundaries, which implies that the *telos* included in the verb semantics is reached.

As we noted in Chapter 1, the imperfective aspect is the semantically unmarked member of the opposition. The suffixes involved in secondary imperfectivization are the only ones that only mark for aspect. Thus, the only purely aspectual marker marks the unmarked member of telic pairs. This marker has a negative function, it marks the non-presence of the semantic feature defining the marked member. This negative function of the only pure aspectual marker makes Russian aspect typologically rather odd.

As shown by Maslov (1948), there is in fact no feature that applies to all aspectual pairs. Even if we accepted that only secondarily derived imperfectives, suppletives and pairs derived by stem alternation establish true pairs, we still would have to account for the fact that not all of these pairs behave the same way. Usually the imperfective aspect in the present tense can denote an action in progress, but this is not so with pairs like *prixoditⁱ/priijt^p* 'come', *prinositⁱ/prinest^p* 'bring', *privoditⁱ/privest^p* 'bring, lead', *naxoditⁱ/najt^p* 'find' as shown in the following example provided by Maslov (1948: 304):

- (10) **Smotri, von on prixoditⁱ*.
(intended: 'Look, here he is coming our way.')

This shows that even those verbs which are supposedly pure semantic pairs do not behave as a homogenous group.

We have seen that the strong criterion for pairedness applies only to a subgroup of Russian verbs and that not even all members of this subgroup behave identically. This strengthens the point made before that every categorization of pairs is to a certain degree arbitrary and thus disputable.

Now let us turn to the relevance of aspectual pairs in language use.

5.2 The empirical status of pairs in language use

The important question for a psycholinguistic study of language acquisition as presented in Part II is:

What role do aspectual pairs play in the linguistic reality of a native speaker?

If we compare the importance that is attributed to pairs in Russian aspectology to the actual importance in the spoken language, we get a surprising result. Forsyth (1972) counted the frequency of the different aspectual forms, i.e., simple imperfectives, simple perfectives, prefixal perfectives, prefixal imperfectives (type *-xodit'*) and prefixal imperfectives (secondary imperfectives) as shown in Table 3.2 adopted from Forsyth (1972: 500) and based on Štejnfel'dt (1963).

Table 3.2: The frequency of different types of aspectual marking

	Items	Frequency	Percentage of total occurrences
Simple Imperfectives	187	17770	45.6
Simple perfectives	27	2240	
Prefixal perfectives	305	17848	40.7
Prefixal imperfectives (e.g. <i>-xodit'</i>)	33	1940	4.4
Prefixal imperfectives (secondary)	111	4080	9.3

Table 3.2 demonstrates that prefixal imperfectives derived by secondary imperfectivization are clearly of minor importance. The most frequent verbs are simple imperfectives and prefixed perfectives. These results are based on written data of the literary language. There is as yet no analysis of the distribution of aspectual forms in the spoken language, but we have no reason to assume that the distribution would turn out in favor of secondary imperfectives.

The meaning of secondary or 'prefixal' imperfectives is much narrower than the meaning of simplex imperfectives, because the prefixation which precedes the

secondary imperfectivization makes the verb more specific than the simplex verb it was derived from. Thus, a speaker who uses a secondary imperfective is more specific and precise than if s/he had used the semantically broader simplex verb. Further, s/he has to know more about the situation than if s/he used only a simplex imperfective verb. S/he needs to know whether and what kind of boundary is relevant. Such precision is usually not a feature of colloquial speech, and thus it seems to be reasonable to expect that the distribution of aspect forms will not be qualitatively different from the analysis of written language. We might expect that these factors are not only reflected in adult language, which serves as input for the language learner, but in the language acquisition data itself. This will be discussed in Part II of this dissertation.

However, there is one caveat. There is no reason to assume that the distribution of aspectual forms is the same in all contexts. Thus, in establishing the distribution of aspectual forms in colloquial speech, we need to test different contexts. This factor is considered in Part II of this study.

To sum up: given the results in Table 3.2, it seems that the role of secondary imperfectivization has been greatly overrated and should not be the basis on which all our theorizing is based. I agree with Forsyth who states:

Awareness of the aspectual opposition is therefore likely to be focused precisely in this contrast [between simplex imperfectives and prefixed perfectives] and not in that of secondary imperfective to perfective.

(Forsyth 1972: 500).

This, however, does not mean that the notion of pair is useless and needs to be abandoned. On the contrary, the notion of pairs is very important for an analysis of Russian aspect. But the definition of pairs needs revision. This will be done in Chapter 5, where a comprehensive theory of aspect is proposed.

Chapter 4: The Pragmatics of Russian Aspect

1. Introduction

In the preceding chapters we have seen that aspect is a complex category in terms of both semantics and morphology. But it is even more complex: the child also has to learn the pragmatics of aspect. The pragmatics of Russian aspect is a broad issue, ranging from the sentence level usage of aspect in e.g., negated, modal, or imperative sentences to broader contexts, such as the role of aspect in a text. A major task for the child is to learn the various utterance and discourse functions of aspect. Discourse functions of aspect have been neglected so far in acquisition studies of aspect. Neither the specific functions nor the contexts in which these forms occur have been closely studied in acquisition research. Researchers have concentrated on studying which forms occur at what age, i.e., the order of acquisition, and with which factors, e.g. Aktionsarten, these forms correlate with. Aspect, however, cannot be studied independently of its functions. To claim that aspect has been acquired presupposes that all pragmatic functions have been mastered by the child as well. Thus, prior to studying the acquisition process we first need to examine the functions the child has to cope with. I concentrate here on the functions relevant for structuring a narrative.

The perfective aspect has one main function, and this is to express sequentiality. In a narrative or complex text the perfective aspect usually indicates the foreground or the plot-line of the narrative. The imperfective aspect has two main functions: the durative function and the statement-of-fact function (*obščefaktičeskoe značenie*).¹ Both of these imperfective functions are used for backgrounding in a narrative.

¹ Other functions like the iterative function are not relevant for this dissertation and have therefore been excluded from this discussion.

In order to understand a narrative (or any text, for that matter), a child has to learn about the mechanisms which structure information. In particular, the child has to learn which information advances the plot, and which information elaborates on the plot or sets the scene. Information that advances the plot is typically called foreground. Information that sets the scene is termed background. This does not imply, however, that background information is necessarily less important. It is entirely possible that some piece of background information becomes very relevant for the story-line later on, i.e., what is background at one moment can become foregrounded at the next moment. Thus, sometimes background information (or at least what seems to be background information at the moment) can become important for the foreground, perhaps even more important than some other part of the foreground (cf. also Reinhart 1984 for a similar observation). Usually, the structure of a narrative cannot be reduced to foreground vs. background, but the background again often divides into relative foreground and relative background. In most cases there are several layers of nested grounding involved (cf. Reinhart 1984: 784). There are various linguistic devices whose use correlates with these two basic types of information. These linguistic means range from syntactic rules to morphological categories such as tense and aspect. Here, I focus on the role of aspect for grounding.

The chapter is structured as follows: I first discuss the functions of the perfective and imperfective aspect and demonstrate (a) that they are generalized conversational implicatures rather than parts of semantics, and (b) how they can be derived from the meaning (the *Gesamtbedeutung*), on the basis of Neo-Gricean Principles (Section 2). Second, I focus on the role of these aspectual functions in structuring a narrative. Third, I discuss the role of aspect for structuring a narrative (Section 3). Fourth, I focus on the role of pragmatics in the acquisition of Russian aspect (Section 5).

2. Aspectual functions

2.1 Perfective aspect

In Chapter 1 we saw that the perfective aspect is the semantically marked member of the perfective vs. imperfective opposition. Thus, only the perfective aspect has a *Gesamtbedeutung*, and I proposed the following definition:

The perfective aspect highlights or signals one or more boundaries of a verb (e.g. *napisat' pis'mo* 'write a letter' or *zaplakat'* 'start crying', or *počitat'* 'read for a while') without taking into account whatever phase precedes or follows the boundary in the *Aktionsart*.

The narrow semantics of the perfective aspect entails that the functions of the perfective aspect are restricted as well. In contrast, the imperfective aspect as the unmarked member of the opposition is open for a wide range of functions. There is no general agreement on how many functions the two aspects have. The different functions are also called peripheral or partial meanings (*Nebenbedeutung*, *častno-vidovye značenija*) (e.g., Zaliznjak and Aleksej 1997). However, in order to clearly factor out semantics and pragmatics, I prefer to talk about functions (a pragmatic notion) rather than peripheral or partial meanings (essentially a semantic notion). I focus here on what I take to be the main function of the perfective aspect: the sequencing function.

The sequencing function of the perfective aspect directly derives from the semantics of the perfective aspect. If a boundary is activated in a verb and then another verb follows, this implies that the preceding event is closed. This is what Timberlake (1982) calls *closure* on the narrative level. A sequence of perfective verbs usually implicates pragmatically that the event described by the subsequent verb does not temporally overlap with the preceding one. Given the general principle of iconic narration, this further suggests that the event expressed in the second verb follows the event expressed in the first verb. This is exemplified in the Russian equivalent to Caesar's *Veni, vidi, vici* (1).

(1) *Ja prišel^p, uvide^p, i pobedi^p.*

This example has a clear sequential reading. Each event serves as a presupposition for the next event. In this example a reading with a different ordering of events is impossible. We could argue, however, that the sequential reading evoked by example (a) is not part of the meaning of the perfective aspect, but rather a result of our world knowledge. We will see below that indeed it is not the perfective aspect that necessarily implies a temporal ordering. Instead, the use of this aspect rather invokes an implicature, and it is this implicature which is responsible for the sequentiality reading.

Hopper (1982) posits sequentiality as the main value of the perfective aspect. This is grounded in the particular definition of aspect he takes:

Aspect is restricted to discussion of the semantic/pragmatic division of what is often called 'actions with a view to their completion', that is, aspect in the Slavist's sense of perfective and imperfective...

(Hopper 1982: 5)

What he assumes as "the Slavist's sense" is one rather disputable and commonly rejected definition of the term. This definition has proven to be inadequate (cf. e.g., Forsyth 1970), but nonetheless, it is still prevalent in introductory textbooks of Russian (cf. the discussion of this definition in Chapter 1).

Hopper is not alone in the assumption that sequentiality is the most important feature of the perfective aspect. A few Slavists even claim that sequentiality is the main feature from which all other functions of the perfective aspect can be derived (Galton 1976, Gurevič 1971). This claim clearly does not hold. Comrie (1985:26-28) has convincingly shown that sequentiality is in fact not part of the meaning of the perfective aspect, but rather an implicature inferable from the context by general conversational principles. Indeed, sequentiality cannot be a necessary feature of the perfective aspect, because it can be cancelled. This is shown by examples such as the following (after Comrie 1985: 27):

- (2) *V tečenie noči veter sorval^P kryšu, razbil^P tri okna i razrubi^P jablonju.*
 'During the night the wind tore off the roof, broke three windows and brought down the apple-tree.'

The perfective aspect in (2) does not trigger a sequential reading or indeed any temporal ordering. The events are portrayed as an unordered set, and they may or may not overlap in time. In other words, the order of events encoded by perfective verbs is simply irrelevant. If the order were important, such a reading could easily be obtained by adding certain adverbs, cf. (2'), which is a modification of example (2):

- (2') *V tečenie noči veter **snačala** sorval^P kryšu, **potom** razbil^P tri okna, **i potom** razrubi^P jablonju.*
 'During the night the wind **first** tore off the roof, **then** broke three windows and **then even** brought down the apple-tree.'

In example (2'), the sequential reading is not a result of the perfective aspect, but of the adverbs added to the original example (bold-faced here).

These examples show that the sequential reading of the perfective aspect is due to the context and the evocation of world knowledge rather than due to the perfective aspect *per se*.

Example (3) further corroborates Comrie's finding that sequentiality is a conversational implicature, or what I called a *function* of the perfective aspect, rather than part of its (semantic) meaning.

- (3) *On postare^P za etu nedel'ju, osunulsja^P i potemnel^P v lice.*
 'During this week he aged; his face grew lean and dark.' ('became sunken and dark' – SS.)
 (cited after Leinonen 1982: 98)

Leinonen (1982) uses this example to illustrate the use of "simultaneous states, resulting from events which are themselves unordered". The process of aging is illustrated by the other two verbs *osunulsja^P i potemnel^P* 'grew lean' and 'became dark', and there is no temporal ordering of these two dimensions of the process.

Examples like (2) and (3) demonstrate that the sequentiality reading does not necessarily need to be present. There is another type of examples, which shows further that sequentiality *cannot* be part of the meaning of the perfective aspect. Under certain circumstances, two coordinated perfective verbs can have a simultaneous reading. This is usually the case in contexts in which the imperfective partner of the perfective verb has an iterative reading instead of a simple durative reading.

- (4) *Inogda zaxodilⁱ Saša. On s vosxiščeniem **posmatrivalⁱ** na Natačku, i Serega **zamečalⁱ**, čto ona pri étom **opuskalaⁱ** glaza.*
 'Sometimes Sasha dropped by. He looked with rapture at Natačka, and Serega noticed that at this she lowered her eyes.'
 (Stadnjuk, cited after Timberlake 1982: 321)

In example (4) the imperfective aspect in *posmatrivalⁱ* 'he looked', *zamečalⁱ* 'he noticed' and *opuskalaⁱ* 'she lowered' necessarily indicates that the event was iterative, even though the three subevents were simultaneous. A durative reading is excluded, even if the adverb *inogda* 'sometimes' were eliminated. I have modified this example by replacing the imperfective aspect with the perfective aspect:

- (4') *Včera zaxodilⁱ Saša. On s vosxiščeniem **posmotrel^p** na Natačku., i Serega **zamečalⁱ**, čto ona pri étom **opustila^p** glaza.*
 'Yesterday Sasha dropped by. He looked with rapture at Natačka, and Serega noticed that at this she lowered her eyes.'

In this context, only perfective verbs such as in (4') can focus on the simultaneity of the two subevents, i.e., Saša's looking and Nataša's lowering of the eyes.¹ Here we talk about a single event with simultaneous subevents expressed by the perfective aspect. In this example a sequential reading of the perfective aspect is excluded.

Thus, there are instances in which the perfective aspect cannot even have a sequential reading.

To sum up: first, it is entirely possible to produce a narrative with perfective verbs without getting a sequential reading. Second, we can get a narrative with

¹ I tested the interpretation of this modified example with three native speakers.

imperfective verbs and a sequential reading. Third, perfective verbs can express simultaneity if this is what the narrative context suggests pragmatically. This all entails that sequentiality cannot be part of the meaning of the perfective aspect, but that it is rather a "derivative" of the meaning, as Bondarko (1990: 11-12) put it, or a conversational implicature (Comrie 1985).

Nonetheless, it is probably safe to claim that sequencing is the main textual function of the perfective aspect. If this is what Hopper (1982) meant by claiming that the fundamental notion of the perfective aspect is event sequencing, I agree.

The question that arises then is this: how can it be explained that the prototypical reading of several perfective verbs in a row is sequentiality if that is not part of the meaning? This can be explained by the interaction of aspectual semantics with general world knowledge. The semantics of the perfective aspect includes the activation of a boundary and simultaneously entails a defocusing of the phases that precede or follow the boundary. The events are thereby portrayed as closed-off wholes, and they therefore appear from the outside like punctual events that have no inner articulation or structure (cf. the classic descriptions given by Razmusen 1891, and taken up by Isačenko 1962 and Comrie 1976)). Now, it is unlikely in human experience that two punctual events would happen at exactly the same time. Therefore, the perfective generally implicates non-simultaneity of events. Now, if two events are not simultaneous, they must occur in sequence, and the order of events is determined by the order of verbs. This produces the classic iconic sequential function of perfectives. None of these implicatures generally arise with imperfectives since these forms do not focus on boundaries, and as a consequence do not portray events as closed-off wholes.¹

¹ There is one exception to this. If several sequenced imperfective verbs are used in the statement-of-fact function, they usually present the events as closed off wholes, but at the same time these events are iterative. See below, Section 2.2.2 for discussion and illustration.

2.2 Imperfective aspect

2.2.1 The durative function

As the semantically unmarked member of the opposition, the imperfective aspect has a broader functional distribution. However, its various contextual readings can all be subsumed under two major functions: the durative and the statement-of-fact function.¹ Both of these functions are used for backgrounding in a narrative.

The durative function expresses an action in its process. This is the only function in which the present tense can be used for present time reference., i.e., present tense forms express that the action takes place at the moment of speaking (5), or at the moment of reference as in (6).

- (5) *A von Lorin papa edetⁱ na velosipede, krutiⁱ pedali, sobaki begu^t za nim vsled, putajutsjaⁱ pod kolesami.*
 'And over there Lorin's father is driving on his bicycle, he turns the pedals, the dogs run after him, they get tangled up under the wheels.'
 (Uppsala corpus, Tolstaja, T. *Somnambula v tumane*, in "Novyj mir". 1974, 8-17)
- (6) *Fakt, čto ja v tot moment, kogda pišuⁱ, ne poinimajuⁱ moix kartin, ne označae^t, čto eti kartini ne imeju^t nikakogo smysla, ...*
 'The fact that at the moment when I paint, I don't understand my pictures does not mean that these pictures do not have any sense,...'
 (Uppsala Corpus, Ganina M., *Poka živu-nadejus'* in "Poka živu- nadejus")

However, as shown by Maslov (1984), some imperfective verbs cannot occur in the durative reading. Verbs denoting a state like *sostoja^t iz* 'contain', *znatⁱ* 'know', *prinadležatⁱ* 'belong' etc. do not have a durative reading. Further, the imperfective verb of motion *prixoditⁱ* 'come', *prinositⁱ* 'bring' *priežžatⁱ* 'arrive by vehicle' for instance can never be used in the sense that the action is taking place at the moment of speech.

¹ I ignore here the iterative function and several other functions attributed to the imperfective verb since they are not relevant for this study.

There are many more verbs for which the durative function cannot be applied. Zaliznjak and Zmelev (1997) name two groups of verbs for which this function is unavailable. The first group contains verbs like *znatⁱ* 'know', *ponimatⁱ* 'understand', *predpologatⁱ* 'propose', *označatⁱ* 'mean', etc. The second group consists of verbs of the type *rukovoditⁱ* 'rule', *komandovatⁱ* 'command', *prepodovatⁱ* 'teach', *carstvovatⁱ* 'reign', *torgovatⁱ* 'trade' etc. (Zaliznjak and Aleksej 1997: 21). What is common to these two groups?

While there are clear idiosyncrasies, at least the first set of predicates seems to be in part pragmatically motivated. The predicates in this set denote general facts that are independent of a specific moment of reference. If one understands or means something, this is not usually limited to a specifiable stretch of time extending around a point of reference. Rather it is a "timeless" property attributed to the subject. As such, it makes no sense conversationally to assert them as internally articulated situations that hold for some time and no other. Whether such an explanation can be extended to the other predicates in these sets is an issue of further research. What matters more for current purposes is that the sets exist to begin with: the existence of imperfective verbs excluding a durative reading suggests that the durative function cannot be part of the semantics of the imperfective aspect. The durative function is a general conversational implicature and therefore extremely common. But it is not built into the definition of the imperfective.

2.2.2 The statement-of-fact-function

The other important function of the imperfective aspect that is of particular relevance for the acquisition process is the statement-of-fact-function (*obščefaktičeskoe značenie*). This function is sometimes claimed to be the main function of the imperfective aspect (Forsyth 1970). However, such claims presuppose frequency analyses that control (at least) for genre and discourse contexts and such analyses are as yet unavailable.

The statement-of-fact function is used – as suggested by the name – to make a statement that an event happened or happens in general. This function seems to be

independent of lexical classes of verbs. Nonetheless, it cannot be part of the meaning, because it does not apply *necessarily*. It is just one of the functions of the imperfective; in particular it competes with the durative function.

For the two groups of verbs mentioned in 2.2.1., the statement-of-fact function is the only one available. Hence, a verb like *znat'* 'know' in the imperfective can only be used in this function:

- (7) *Kto iskrenne veril' v etu daže psixologičeski nereal'nuju cifru, ne znaju'.*
 'Who wholeheartedly believed in this even psychologically unreal number, I don't know.'
 (Uppsala Corpus, *O tex kto protiv*. "Moskovskie novosti", 88-12-11 (656))

This function of the imperfective aspect is very close to the use of verbs in the perfective aspect, which also 'state a fact':

- (8) *V odnom is portretov na stole ja uzna^P Il'ju Ivanoviča...*
 'On one of the portraits on the table, I recognized Il'ja Ivanovič...'
 (in Uppsala corpus, Granin, D. *Dom na Fontanke*, in "Odnofamilec", Moscow, 1983, 410-424)

The difference of the two aspects here is one of focus. Whereas the perfective aspect focuses on the boundary, the imperfective aspect, in line with its indeterminate semantics, does not entail any commitments about the boundaries, i.e., either no boundaries are given at all as in duratives, e.g., *pisat'* 'write', or they are defocused as in telic verbs, e.g., *nalivat'* 'pour'. For example (7) above is meant to be a general statement. The statement of *ne znaju* 'I don't know' is independent of time and does not refer to any boundaries on the time line..

There are some verbs which can be used in the both functions, e.g. *kurit'* 'smoke'. In (9) the verb is in the durative function. A concrete situation is described. In (10) the same verb is in the statement-of-fact-function, which makes a claim about a habit.

- (9) *Ves' étot den' djadja ležal' v komnate i kuril'.*
 'The whole day uncle was lying on the couch in the room and smoking.'
 (Uppsala corpus, Iskander, F., *Lošad' djadi Kjazyma*, In: "Prazdnik ožidanija prazdnika", Moscow, 1986, 143-155)

- (10) *A polkovnik poduma^p, čto ne kuritⁱ soldatik po molodosti, i poxvali^p ego.*
 'The Colonel thought that the (little) soldier didn't smoke because of his youth, and he praised him.'
 (Uppsala corpus, Astaf'ev, V., *Saška Lebedev*, in: "Rasskazy", Moscow, 1994, 220-226)

Sometimes, however, only the broader context can decide which reading is intended. This is illustrated by (11).

- (11) *On ničego ne delaⁱ, tol'ko ležaⁱ i kurilⁱ,...*
 'He didn't do anything, he only lay (around) and smoked,...'
 (Uppsala corpus, Iskander, F., *Lošad' djadi Kjasyma*, in: "Praznik ožidanija Praznika", Moscow, 1986, p. 143-155)

Sentence (11) could either describe a specific situation or a general habit of the person. The interpretation of this sentence is entirely dependent on the broader discourse context.

To sum up: we have seen that neither the durative function, nor the statement-of-fact function is part of the meaning of the imperfective aspect. They are definitely the most important functions of the imperfective aspect, but since they do not work with all verbs, we cannot attribute these readings to the meaning of these forms. This is in line with the claim that the imperfective aspect is the semantically unmarked member of the aspect opposition. If one of the two functions were part of the imperfective semantics, then this aspect would not be the unmarked member of the opposition. The opposition would be equipollent, not privative.

We noted in Section 2.1. that two coordinated perfective verbs usually imply sequentiality. If two imperfective verbs or one imperfective and one perfective verb are coordinated, the typical reading is that the two events overlap in time. However, like sequentiality with perfectives, this is only a general (and highly conventionalized) conversational implicature, but it is by no means part of the semantics. This is shown by examples such as the one in (12). Both the simultaneous and the sequential reading are found in (12).

- (12) *Cto delat', on spal', videl' vo sne gadosti, prosnuvšis', obdumyval' uvidennoe i vnov' zabyvalsja', a utrom pil' kofe na kuxne vmeste s...*
 'What to do? He **slept** and he **dreamt** horrible things. After waking up, he thought about what he had dreamed (seen) and he dozed off again, and in the morning he drank coffee in the kitchen together with...'
 (Uppsala corpus, Tolstaja, T., *Somnambula v tumane*, "Novyj mir", 1988, 8-17)

The sleeping and dreaming in *on spal', videl' vo sne gadosti* 'he slept and dreamt horrible things' are simultaneous actions. The simultaneity reading is due to the semantics of the imperfective verb. In the imperfective verb, no boundaries are activated, and thus, it is entirely possible for the two actions to go on simultaneously.

Like the sequential reading of the perfective aspect, the simultaneous reading of the imperfective aspect is a conversational implicature. The pragmatic reasoning behind this implicature goes as follows: two actions are named, but no boundaries of these events are mentioned. This implies that we do not know when the events started or when they will end. Since we do not have such information we cannot assume sequentiality either. If the speaker wanted to imply sequentiality s/he would have activated the boundaries of the verbs (as per the Gricean Maxim of Quantity: use the semantically most specific form). Since the speaker did not activate any boundaries, and we assume that the speaker is conversationally cooperative, we infer that the speaker did not want to imply sequentiality. If he did not want to imply sequentiality, we can assume that there is no sequentiality in the events. If coordinated events are not sequential, they must overlap in time. Thus, the information the speaker wants to convey is that the two events overlap in time. This is the general reading behind the simultaneous reading of two verbs in the imperfective aspect. However, in the specific case of example (12) implicature computation is not even necessary. The lexical knowledge of *videt' vo sne* 'dream' is sufficient to know that the person is asleep and thus the two actions 'sleeping and dreaming' in (12) must be simultaneous.

Further, we get a sequential reading with *on spal', videl' vo sne gadosti + obdumyval' uvidennoe + zabyvalsja' + pil' kofe* in (12). The reasoning for the sequential reading of the imperfective aspect goes as follows. The speaker used the imperfective aspect. The use of this aspect seems to suggest that he or she did not

want to make a statement about sequentiality. Otherwise the speaker would have used the perfective aspect, which typically implies sequentiality. This suggests that the speaker used the imperfective aspect to implicate simultaneity. However, the context in which the verbs occur does not allow for a simultaneous reading. This suggests that the speaker indeed wanted to imply a sequential reading. However, to get a sequential reading, the speaker could have used the perfective aspect evoking the conversational implicature of sequentiality. The perfective aspect with a sequential reading would have had the additional implicature that the whole sequence of events is a single closed superevent that takes place once. Since the speaker did not use the perfective aspect, but the imperfective aspect without the intention of implying simultaneity, he must have wanted to imply a sequence of events that is not a single whole taking place once, but has an iterative reading. It seems that if several imperfective verbs are used to express a sequence we get an iterative reading.

To sum up: both the durative and the statement of fact function can be used to convey a simultaneous reading or a sequential reading. The context within and above the sentence decides which interpretation is adequate. None of these readings is part of the meaning of the imperfective aspect. Both functions are conversational implicatures.

3. The role of aspect in discourse structure

The main tenet of the discourse approach is that "...the fundamental notion of aspect is not a local-semantic one, but is discourse-pragmatic..." (Hopper 1982: 5). Thus, the topic of investigation is at first glance very different from the semantic approaches presented above. However, even though the focus is different, such an approach does not necessarily imply that an invariant or *Gesamtbedeutung* is considered to be non-existent or not worthwhile investigating. Even Hopper, a proponent of a radical discourse approach, states that "...this assumption [the existence of an invariant – SS] is probably a prerequisite to talking about aspect at all,..." (Hopper 1982: 5). At the same time, he claims that the "fundamental notion"

of aspect is a "discourse-pragmatic" one, and it is characterizable as "completed event in the discourse", i.e., the perfective aspect is characterized to be an "event-sequencer". Verbs in the perfective aspect are predominantly used to describe foregrounded events, i.e., the development of the story-line, whereas the imperfective is mostly restricted to the background.

How to interpret the term 'fundamental notion' is not quite clear. On the one hand, Hopper's "fundamental notion" is very close to the notion of meaning in semantics:

A form must have a consistent value or else communication is impossible; we cannot have forms that derive all their meanings only from context.

(Hopper 1982: 4)

On the other hand, Hopper immediately relativizes this statement with the claim that this applies foremost to lexical vocabulary and "the more abstract or 'grammatical' a morpheme is, the more it draws upon context for its interpretation" (Hopper 1982: 4).

Hopper's (1982) specific claim is that the fundamental notion of aspect lies in the foreground vs. background articulation of discourse. There are no generally accepted definitions of 'foreground' and 'background' available. Hopper and Thompson (1980) define the two concepts as follows:

That part of a discourse which does not immediately and crucially contribute to the speaker's goal, but which merely assists, amplifies, or comments on it, is referred to as **BACKGROUND**. In contrast, the material which supplies the main points of the discourse is known as **FOREGROUND**.

(Hopper and Thompson 1980: 280)

In particular, foreground consists of sequential events, whereas the background sets the scene. Hopper and Thompson indicate two main characteristics for foreground. First, it forms the basic structure of the text, i.e., it is comprised of the important incidents in a narrative. Second, the foregrounded clauses form an ordered sequence

of events (Hopper and Thompson 1980: 281). I first discuss the role of sequentiality for structuring a narrative.

3.1 Sequentiality and foregrounding

Going at least back to Labov and Waletzky (1967, cf. also Labov 1972), the foreground of a narrative is conceived of as a sequence of temporally ordered events. Hopper (1979, 1980, 1982) takes sequentiality as a main feature of his analysis. He argues that the perfective aspect denotes foregrounded events in sequence; and this is claimed to be grammaticalized. Although this is certainly a simplification of the facts (Chvany 1985), sequentiality indeed probably plays the most important role for foregrounding. The correlation of perfective aspect and foregrounding has long been known:

Each perfective verb denotes an action which is a new event, bringing about, or at least marking the transition to, a new state of affairs, and thus carrying the narrative forward. The imperfective verbs, on the other hand, do not present dynamic changes, but rather facts relating to the background...:

(Forsyth 1970: 9-10).

However, the correlation is statistical, not absolute nor grammaticalized (cf. Chvany 1985).¹ If it were an absolute grammatical constraint, durative verbs – which are always imperfective – could never occur in the foreground of a Russian text, however, they do occur here (cf. (13)). If this were not the case, foreground would be a deterministic category and the speaker would not be free in what he could foreground and what not.

- (13) *Griška se^p poudobnee, vzdoxnu^p neskol'ko raz poglubže, čtoby son prognat^p, i prinjalsja^p bez ustali krutitⁱ ložkoj v stakane. Sam **dumaet**ⁱ: "Možet byt', sočinit^p skazku pro devočku Lizu?*

¹ To find out exactly about the strength of this correlation we would need systematic investigations looking at different contexts.

'Griška sat down more comfortably, seighed several times deeply to chase away the dream, and he started to whirl around the spoon in the glass. He thought by himself: "may be I should compose a fairy tale about the girl Lisa..." (Uppsala corpus, Tendrjakov, V. *Noč' posle vypuska*, In "Novyj mir", 1974, 82-92)

The verb *dumaet'* 'he thinks' is clearly part of the foreground and brings the story line further. This example suggests that the correlation is statistical rather than absolute.

The fact that we are dealing with a statistical correlation rather than a grammatical constraint does not in any way diminish the value of the correlation; it just puts it into a different light. I will come back to this in Chapter 5 where I propose a unified approach to this correlation.

The foreground is usually marked by a sequence of events constituting the story line. This brings us back to the iconic reading of sequence of perfective verbs in a sentence (cf. Section 2.2). This is important for the story line of a narrative. In general, the order of clauses tends to correspond to the order of events (cf. Jakobson 1966, Haiman 1985). In a narrative, usually one action or event is contingent on the next, and even when there is no connection indicated, the listener constructs a temporal or causal connection (cf., Haiman 1985, Fleischman 1985). Especially in oral speech, but also in written speech, formal markers indicating sequentiality are often omitted. Consider example (14) discussed by Haiman (1985: 91):

(14) *She got married and had a baby.*

In such an utterance there is only one iconic interpretation, i.e., the event described by the first verb temporally precedes the event described by the second verb. Otherwise we would expect the speaker to turn the order around if s/he is being cooperative in the Gricean sense. Thus, even without an overtly expressed ordering, the listener knows when to impose a sequential reading. In other words, we can expect that the order in an utterance mirrors the temporal order of events. This has to do with the maxim of manner with its submaxim "Be orderly" (Grice 1975, Grice 1989, Levinson 2000). The reason why this submaxim plays a role in discourse is the 2-dimensionality of speech as stated by Levinson (2000: 135): "Because speech is

linear, the main dimension of iconicity is order.". If the speaker is being cooperative and does not indicate that the order of events is **not** iconic, we can expect that the speaker wants to implicate that the two events happened in the order given in the sentence.

Now the question arises why the perfective aspect and not the imperfective aspect correlates with foregrounded events and thus with sequentiality. Hopper's (1982) general discourse principle mentioned above applies primarily to telic and punctual verbs. A sequence of events consists usually of several events that have either a result or are at least finished. Telic and punctual verbs in such contexts can occur in the imperfective and perfective aspect. However, only the perfective aspect activates the boundary in the semantics of the verb, i.e., the result or goal in a telic verb. If we want to comply with the Gricean Quantity Maxim, we need to say as much as necessary to be clear. Thus, we need to use the perfective aspect if we want to express that the boundary of a telic verb has been reached. If we used the imperfective aspect, we would not comply with the Quantity Maxim, because we would be saying less than we could and in fact should.

From this, the relationship between Aktionsart, aspect and foregrounding becomes straightforward: telic verbs include the goal or result of an event. The thread of a text is expressed by events following one after the other: only if the boundary of one event has been reached can the next event begin. If the verb is imperfective, no boundaries are activated and hence another action or event can go on simultaneously. This is why the perfective aspect is typically associated with the foreground, while the imperfective aspect typically renders a simultaneous reading and is best suited for the background.

Turning to the statement-of-fact-function (*obščefaktičeskoe značenie*) of the imperfective aspect, one first notes that it is in some respects similar to the perfective aspect. Both present an event as an unarticulated whole. If a telic verb is used in the imperfective aspect instead of the perfective aspect, it usually either expresses that the goal has not been reached (15), or that it is an iterative event (16).

- (15) *Sel' poslednyj urok, učitel'skaja bylaⁱ pusta, tol'ko Evgenij Ivanovič Morščixin, prepodavatel' matematiki v staršix klassax, sobiral' v uglu svoi knigi.*
 'It was the last lesson, the teacher's room was empty, only Evgenij I. Morščixin, the math teacher of the higher classes was collecting his books in the corner.
 (Uppsala corpus, Tendrjakov, V. *Črezvyčajnoe*, In: "Izbrannye proizvedeniya v 2-x tomax, t.2, Moscow,, 1963, 525-539)
- (16) *Vremja ot vremeni mne snilsjaⁱ Vadim. Son povtorjalsjaⁱ v tečenie mnogix let, odnoobraznyj javstvennyj: ja šel' po Nevskomu i vstrečal' Vadima. On axal': "Ne možet byt', neuželi ty ostalsja^p v živyx?...'*
 'From time to time I dreamt about Vadim. The dream repeated itself over many years in a monotonous, clear way: I went along the Nevskij Prospekt and met Vadim. He exclaimed: "is it possible that you are/remained alive?".
 (in Uppsala corpus, Granin, D. *Dom na Fontanke*, in "Odnofamilec", Moscow, 1983, 410-424)

I would classify (15) and (16) instantiating the statement-of-fact-function. If the result has not been reached, we get what is traditionally labeled the *conative* function of the imperfective aspect. The conative function can be defined as follows: a telic verb used in the imperfective aspect expresses that the goal of the action has not been reached, but that it was attempted. This function is often cited with the addition of the phrase *no ne Vⁱ* 'but not V', as illustrated by (17).

- (17) *On dolgo ugovarival' menja, no ne ugovori^p.*
 'He was trying to convince me for a long time, but he did not convince me.'
 (Comrie 1976: 19)

This type of construction – although prominently discussed in the aspect literature – is probably very rare in natural discourse.

To summarize so far, the prototypical reading of a sequence of imperfective verbs is simultaneous. But this is, as we have seen, by no means a necessary, but rather a preferred reading. This explains why the imperfective aspect is prototypically used in the background. If the reading of several imperfective verbs is sequential, the single subevents get an iterative reading and as a consequence the superevent (taken

all the subevents together) gets an iterative reading as well as in example (12). However, the imperfective aspect can also be used to foreground an event, as in (18).

- (18) *Nu, čto sdelaješ^p. Ja čitalⁱ ved'' koe-čto etix avtorov, ja s nimi znakom, ja s nimi razgovarivalⁱ, slyšalⁱ ix. Čto že vy budete somnevat'sja, čto ja v svoe vremja ne kupi^p by knišku Sofranova, a kupi^p by knišku Pasternaka, esli by ona vyxodilaⁱ?*

'Now, what can you do. I have indeed read some things of these authors, I know them personally, I have talked to them, I listened to them. Why are you doubting that at that time I would not have bought Sofranov's book, but would have bought Pasternak's book, if it had appeared.'

(Uppsala corpus, *Exo Moskvu*, 11/18/1997)

This short paragraph, which is part of an interview, illustrates nicely that the decision of what is foreground and what background can sometimes be of considerable difficulty. We cannot evaluate the foreground vs. background articulation by inspecting verb forms without becoming circular. If we consider the importance and the focus put on the utterance, *Ja čitalⁱ ved'' koe-čto etix avtorov, ja s nimi znakom, ja s nimi razgovarivalⁱ, slyšalⁱ ix* 'I have indeed read some things of these authors, I know them personally, I have talked to them, I listened to them.', we would classify the imperfective verbs *čital* 'read' *razgovarival* 'talked', *slyšal* 'listened' as foreground. These verbs indicate the reason for why the doubts of the interlocutor are ill-founded. Even though we do not know the broader context of this conversation, it becomes evident that these imperfective verbs are decisive for the story. As noted above, if it was not possible to use imperfective verbs in the foreground, it would never be possible to have a durative verb in the foreground. However, in a dialogue, it might very well be that a division into foreground and background is not always given. One additional complexity with this example is that it is not strictly narrative, it is not based on a well-defined time line. So 'foreground' and 'background' have different meanings from what they mean with regard to time-line-based narratives.

3.2 Importance and foregrounding

The second factor relevant for foregrounding proposed by Hopper and Thompson (1980) can be called *importance of an utterance* (cf. Chvany 1985). We need to distinguish between two types of importance. First there is what can be called *general human importance*, which is probably to a certain degree culture-specific. This type of importance can be related to perceptual strategies as summarized in Gestalt psychology (cf. Reinhart 1984). I will come back to this type of information in Section 5 of this chapter.

The other type of importance can be called importance to the story, or *perceived importance*. This is a highly subjective factor hard to define in clear terms, because whether something is important or not strongly depends on the knowledge of the reader or interlocutor. An utterance that might have been categorized as unimportant while one is reading, it can turn out to be of crucial importance for subsequent events. Thus, the reader or listener might be able to evaluate the actual importance of an utterance only in retrospect. In some cases the reader/listener can perhaps determine the importance by the general Gricean Maxim of Relevance. This maxim, however, is notoriously vague, and one would need to find some clear-cut criteria to decide if something is important or not. Intuitively, this factor seems to be very important for the determination of foreground, but how one can operationalize this criterion needs to be seen.

We noted that sequentiality cannot be the only factor playing a role for foregrounding. Instead of operating with a single factor (sequentiality) or with two factors (sequentiality and importance) to describe foreground, it seems more fruitful to operate with a 'cluster concept' of multiple factors (Hopper and Thompson 1980, 1984, Wallace 1982, Fleischman 1985, Chvany 1985). Wallace's definition of cluster concepts will be applied here: "a notion with a number of defining factors, no one of which necessarily predominates in any given situation, and some of which may upon occasion conflict. Consequently, one should not expect simple all-or-none compartmentalization, but prepare to weigh numerous contribution influences." (Wallace

1982: 216). In the following I will argue that the notions of textual importance and foregrounding are best captured by a such a cluster concept.

4. The transitivity hierarchy

In a more general approach to grounding, Hopper and Thompson (Hopper and Thompson 1980) posit what they call the *transitivity scale*. This scale is intended as a unified set of principles explaining systematic correlations between linguistic features and their role in narratives. The features of the transitivity scale correlate with grounding in text. Hopper and Thompson's (1980) transitivity scale is reproduced in Table 4.1.

Table 4.1: The transitivity scale (Hopper and Thompson 1980: 252)

	High	Low
A. PARTICIPANTS	2 or more participants A and O	1 participant
B. KINESIS	action	non-action
C. ASPECT	telic	atelic
D. PUNCTUALITY	punctual	non-punctual
E. VOLITIONALITY	volitional	non-volitional
F. AFFIRMATION	affirmative	negative
G. MODE	realis	irrealis
H. AGENCY	A high in potency	A low in potency
I. AFFECTEDNESS OF O	O totally affected	O not affected
J. INDIVIDUATION OF O	O highly individuated	O non-individuated

On a textual level, high transitivity correlates with foregrounding, and low transitivity with backgrounding):

If two clauses (a) and (b) in a language differ in that (a) is higher in Transitivity according to any of the features A-J, then, if a concomitant

grammatical or semantic difference appears elsewhere in the clause, that difference will also show (a) to be higher in Transitivity.

(Hopper and Thompson 1980: 252)

I am primarily interested here in the role of aspect for grounding, i.e., in its relation to transitivity. The features telic and atelic are important points for aspect in the scale. Hopper and Thompson (1980) characterize 'telic' as highly transitive and 'atelic' as low in the transitivity scale. Unfortunately, Hopper and Thompson (1980) use the terms telic and perfective, and atelic and imperfective, interchangeably. They claim: "[w]hereas telicity can be determined generally by a simple inspection of the predicate, perfectivity is a property that emerges only in discourse." (p. 270). This is a very idiosyncratic use of the terms perfective and imperfective, and is at odds with most of traditional and modern aspectology. As a third category, Hopper and Thompson (1980) distinguish 'Aktionsart' which they use in the sense applied in this dissertation, i.e., for the inherent type of action of a verb. The distinction between telic/atelic and Aktionsart is then, however, far from clear. This terminological confusion is rather unfortunate, because it makes it difficult to evaluate the claims. But this problem aside, we can still consider the correlations on the transitivity scale that Hopper and Thompson (1980) suggest for aspect. There indeed seems to be a correlation between aspect and volitionality. Chvany (1985) and others have convincingly shown that these correlations are not absolute, but only statistical, i.e., the strong version of the hypothesis does not hold. There are constructions in Slavic where the perfective aspect (which encodes punctuality and/or telicity) co-occurs with a non-volitional subject and the imperfective aspect with volitional subjects (Chvany 1985: 253). If the Transitivity Hypothesis is seen as a statistical hierarchy, it fits better with the tenets of the discourse approach than if it is seen as an absolute correlation. It then places emphasis on context and admits that the means in discourse are strongly context-dependent. In general, a statistical approach is in better line with the probabilistic nature of discourse data than an absolute approach: like all psychological facts, human discourse is governed by probabilities less than absolute rules.

The Transitivity Hierarchy is not the only hierarchy that evaluates the salience of linguistic categories. Wallace (1982: 211) cites other such hierarchies: Comrie's (1981) "animacy hierarchy", Givon's (1976) "topicality hierarchy", Reid's (1977) distinction of "focus", Silverstein's (1976) "agency hierarchy" and Timberlake's (1975) "individuation hierarchy". The basis of these categories seems to lie in general principles of human behavior such as anthropocentricity, individuation, etc. Wallace summarizes these hierarchies in what he calls *salience* in linguistic categories. This hierarchy (cf. Table 4.2) is very suggestive of the mechanisms by which the foregrounding vs. backgrounding articulation is acquired by children.

Table 4.2: *Salience in Linguistic Categories (Wallace 1982: 212)*

	MORE SALIENT	LESS SALIENT
A.	human	nonhuman
	animate	inanimate
	proper	common
	singular	nonsingular
	concrete	abstract
	definite	indefinite
	referential	nonreferential
	count	mass
	nonthird person	third person
B.	perfective	nonperfective
	present-immediate	nonpresent-remote
	eventive	noneventive
C.	transitive	intransitive
	actional verb	stative verb
	deliberate action	accidental action
D.	main clause	subordinate clause
	foreground	background

The last opposition (labelled D), namely foreground-background, however, might best be omitted, since it seems to result from the clustering of the other features in this hierarchy.

Complex co-occurrences give a clue of what is important and what is not important. Individuation is certainly a key element in these correlations. Children have to filter out these correlations and learn thereby the complex interactions of foregrounding and backgrounding. Wallace suggests that the hierarchy in Table 4.2 and in fact all the other sub-hierarchies subsumes have their grounding in human perception, based on the Gestalt-psychological distinction of figure and ground. The figure is always the more bounded, well-defined, contoured and stable thing in contrast to the background which is basically the unmarked, undefined member of the opposition. Human perception is claimed to be structured so as to perceive and easily process these contrasts. If the distinction of figure and ground is indeed, as Wallace (1982: 218) suggests "a very broad sort of contrast which applies across traditionally separated areas of human cognition and human behavior," it could be indeed a good starting point in explaining acquisition. These correlates of grounding are probably partly universal, partly culture-specific and partly context-dependent.

In the acquisition of aspect and its role for structuring a text the child thus gets a lot more information than we might assume on first sight. The child does not only get the verb and its morpheme structure as a clue for aspect and grounding behavior, but s/he is confronted with the whole intrasentential and extrasentential context which is structured by saliency. This should help the child in finding out about discourse structure. Saliency in combination with the application of Gricean conversational principles is probably the way into learning this system.

In the next chapter, I present an approach which tries to integrate the different levels relevant for aspect and show how this yields an over-all model of the acquisitional process.

Chapter 5: An Integrative Approach to Russian Aspect

1. Introduction

As we have seen in the preceding chapters, aspect is a complex category on all linguistic levels. The acquisition process is thus potentially complex as well. Often, studies of aspect restrict themselves to only morphology or only semantics or only pragmatics, and so far no theory has been brought forward that incorporates all three levels and aims at explaining their interaction. Such a theory, however, is a prerequisite for an acquisition study that aims at a comprehensive description of the development of this category. To learn about the semantics of aspect, the child has to figure out whether a given verb form is perfective or imperfective, i.e., s/he has to master the morphological markers of aspect. Further, semantics and pragmatics of aspect are strongly interconnected. All these levels are tightly interwoven, and when investigating the acquisition of one of them we need to be aware of the child's tasks on the other levels as well, and what role they play in the learning process. This requires an integrative theory of Russian aspect. The remainder of this chapter is devoted to developing such an approach.

The main feature of this approach is markedness. In the last decades markedness theory has gained considerable significance not only in the linguistic literature in general, but also in studies of first and second language acquisition (e.g., Clark and Clark 1978, Eckman 1977, 1983, Rutherford 1982). There is, however, ample variation in how this concept is applied (cf. Andersen 1989 for a thorough discussion) and it seems to be more appropriate to talk of a "family of hypotheses" rather than of a theory (Eckman, *et al.* 1983: 10). The notion of markedness, as introduced by Trubetzkoy in the Prague School (1939/1969) for the investigation of language-specific phonological features, has not only been extended to all linguistic levels such as syntax and semantics, but in addition other notions have been proposed, such as

discourse markedness (Givón 1979), typological markedness (Greenberg 1966a, Eckman 1977, Croft 1990), distributional markedness (Greenberg 1966a, Gundel, *et al.* 1983) and situational markedness (Comrie 1983). Thus, the original concept as applied in Praguean structuralism has been extended considerably. Since markedness is used in many different ways, based on different understandings of the term opposition, it is extremely important to specify exactly what is meant when using the term. Instead of discussing the different usages of the term in the literature, I will simply define my usage as clearly as possible.

In this chapter I try to show that markedness is a useful concept for explaining the acquisition of Russian aspect. I extend the notion of aspectual markedness from semantics, – as introduced by Jakobson – to morphology and pragmatics of aspect. Jakobson (1932, 1957) showed that the imperfective aspect is the semantically unmarked member of the opposition between perfective and imperfective verbs (cf. Chapter 1 for a discussion). This concept of inherent markedness is very useful, but it takes the semantics of aspect in isolation, which is not sufficient for a comprehensive study of aspect and an acquisition study in specific. In an acquisition study we need to explain how the child learns about the markedness relations in Russian, i.e., that the perfective aspect is the semantically marked member of the opposition. The child can learn this only by making generalizations about forms heard in different contexts. Thus, in a comprehensive acquisition theory, we need to include the role of morphology and pragmatics in forming the invariant. The exclusive focus on a very abstract invariant has been one of the main targets of criticism of this approach. To remedy this shortcoming, we need to extend the concept of markedness. Chvany (1985: 248) has shown that it is worthwhile to distinguish *inherent markedness* from *contextual markedness*. Inherent markedness refers to systemic markedness inherent in lexical and grammatical signs, i.e., as introduced by Praguean structuralism. Contextual markedness, on the other hand, deals with informativeness in the sense used in information theory (Chvany refers to Gleason 1961), Firbas' (1966) notion of communicative dynamism, and Neo-Gricean pragmatics (Levinson 2000). The term *contextual markedness* is actually equivalent to Givón's *discourse markedness*,

defined as follows: "...the degree to which a discourse phenomenon constitutes a *surprise*, a break from the communicative norm. And since the norm may shift during discourse, the degree of communicative surprise is obviously relative to the norm *at any given moment*." (Givón 1979: 88). Chvany (1985) uses the distinction between inherent and contextual markedness to explain grounding in narratives, and, more generally, stylistic effects in literature. She exemplifies this distinction as follows: the perfective aspect is inherently marked (i.e., semantically), and hence more informative. This is a very abstract notion of markedness, detached from any context. However, if we look at specific contexts the picture might look different. For instance, in the context of a past tense narrative, which usually deals with the advancement of a plot, the perfective is far more common and hence from a point of view of informativeness it is less marked than the less frequent imperfective. This observation is confirmed by frequency counts showing that the perfective aspect is most frequent aspect in narratives (cf. Josselson 1953, Vakár 1969, Stejnfel'dt 1963).

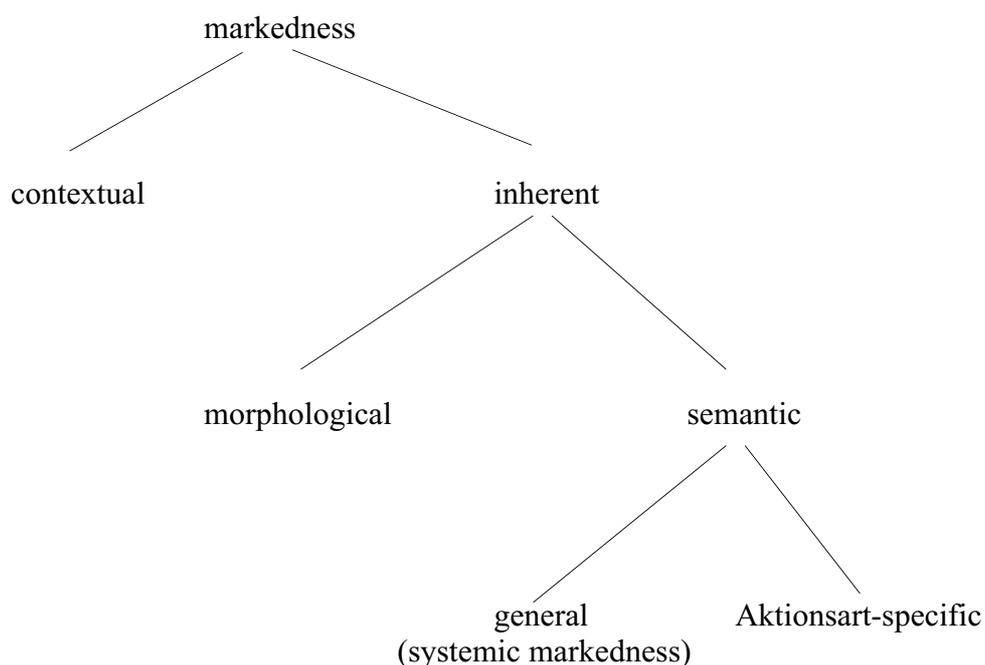
Thus, in contrast to *inherent markedness*, the concept of *contextual markedness* is based on statistical frequency and is likely to differ from context to context. This distinction between inherent and contextual markedness suggests that the perfective aspect can be marked (in terms of inherent markedness) and unmarked (in the context of past tense narratives) at the same time.

Behind the division into inherent and contextual markedness lies a more general point, which is of major importance for the present approach and the explanation of the acquisition process. To give an adequate explanation of aspect, we need to look at all features from morphology to pragmatics. As mentioned before, this applies especially to an acquisition study, because an acquisition study cannot afford to limit itself to one linguistic level alone, e.g., the semantics of aspect, without taking the different morphological markers for the two aspects into account and without specifying the context the form is applied in.

In the following, I show that the distinction between various terms of markedness are useful for an acquisition study of aspect. But before going into this, let us first specify how the term inherent markedness is applied. For a language acquisition study

of aspect, it is useful to differentiate the concept of inherent markedness into two classes of concepts: morphological vs. semantic markedness. Semantic markedness in turn splits into general (or systemic) markedness and Aktionsart-specific markedness. This is summarized in Figure 5.1. and will be briefly surveyed in the following. Each concept will be discussed in detail in the remainder of this chapter.

Figure 5.1: Different types and levels of markedness.



Morphological markedness is relevant for an acquisition study of aspect, because the first task a child encounters is to determine whether a verb is perfective or imperfective. This is done by analyzing the morphological structure of a verb form, independent of whether we assume that the child learns the form by rote or analyzes it morphemically.

Further, I differentiate two types of *semantic markedness*. First, semantic markedness applies to the grammatical category of aspect, i.e., whether the perfective or the imperfective aspect is the marked member of the opposition (*general semantic markedness*). This is a very abstract notion of markedness of verbal aspect, and here the perfective aspect is marked and the imperfective aspect unmarked. This was shown in Chapter 1, on the basis of Jakobson's approach to aspect. Second, semantic

markedness deals with the markedness of aspectual forms with respect to the individual Aktionsarten (*Aktionsart-specific semantic markedness*). The viewpoint here is a different one. We start from the verbal semantics and then determine the markedness value of the two aspects. Only telics can be evaluated for this opposition. The perfective aspect is the unmarked member e.g., *prostítʹ* 'forgive' and the imperfective aspect the marked member *proščatʹ* 'forgive'. All other Aktionsarten have a fixed aspectual choice.

In the following, I discuss inherent and contextual markedness in more detail. First, I concentrate on inherent markedness, starting with morphological markedness. Then, I comment on the two types of semantic markedness. Second, I discuss contextual markedness, i.e., the role of aspect and the status of markedness in context. Third, I integrate the two types and discuss their role for language acquisition.

2. Inherent markedness

2.1 Morphological markedness

Aspectual pairs play an important role in studies of Russian aspect. I show in the following that the concept of pair plays an important role indeed – not only for the definition of aspect, as it has been used predominantly, but also for an explanation of aspectual morphology.

Comprehension as well as production of any Russian verb form depends on mastery of the formal markers of aspect. The child has to recognize which verb form is the perfective and which is the imperfective partner of an aspectual pair, because this is the choice the child encounters for interpretation and production. As we have seen in Chapter 3, there is no unique marker for either of the two aspects. The child has to deal with an array of different morphological markers and s/he has to find out which marker marks which aspect.

The morphologically marked form is more complex than the unmarked form, i.e., the marked form contains an affix that the unmarked form lacks. This is the typical

usage of the term 'formal markedness' in the literature (cf. e.g. Greenberg 1966b, Comrie 1976, Lyons 1977), however, this usage considerably departs from the usage of the term introduced by Trubetzkoy and we need to be aware in what way. Trubetzkoy's use has to do "...with paradigmatic oppositions of distinct phonological signs, and not with the syntagmatic modification of the sense of one sign by the addition (affixation) of another." (Andersen 1989: 13).

For an aspectual study, morphological markedness depends on the concept of aspectual pair. To determine whether a sign is marked or unmarked, we need something to compare it to, i.e., pairs of marked and unmarked verb forms. In Chapter 3, however, I showed that it is doubtful whether pairedness based on the strong criterion of semantic identity is helpful for a comprehensive analysis of the Russian aspect system, because it excludes a very large number of Russian verbs. The notion of morphological markedness is strongly dependent on the notion of pair that we assume. If we claimed that secondary imperfectivization is the only productive, pure aspect marker we would be claiming that the imperfective aspect is the morphologically marked member. This would be a problematic position, because we would have to claim at the same time that all the numerous imperfectiva tantum are outside the system, because they do not have a partner to which their morphological status can be compared.

The exclusion of simplex verbs seems to be the common position. This does not only encompass imperfective verbs which do not have a perfective partner, e.g. *naxodit'sja* 'be located at', but all durative verbs in general, because the perfective 'partner' adds an additional meaning nuance, which is not part of the imperfective verb, e.g. *čitat'/pročitat'* 'read'. But as a consequence, one would also have to exclude all the perfective verbs which are modifications of these simplex verbs and do not have a secondary imperfectivization, i.e., which are perfectiva tantum, e.g., *pisat'ⁱ/napisat'^p* 'write'. The reason for this is that we do not have a verb form to compare it to. This would make the analysis of the Russian aspect system rather awkward, because as we have seen before, every Russian verb form is either

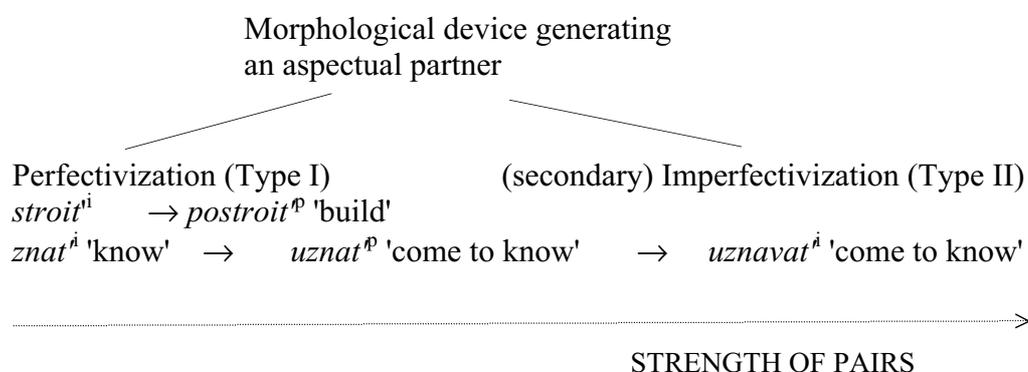
perfective or imperfective, and it would be impossible to describe the morphological marking of aspect in a systematic way.

To summarize: in such an account, many verbs would have to be analyzed as *imperfectiva tantum* or *perfectiva tantum*, i.e., as unpaired. In fact, all activity and state verbs, which are always imperfective, as well as all perfective verb forms derived from them without having a secondary imperfective, would have to be classified as unpaired. Further, if we followed Isačenko (1962), all verbs with so-called empty prefixes would have to be considered unpaired as well. Only verbs derived by secondary imperfectivization, some pairs derived by stem alternation, and a few suppletives would count as true aspectual pairs.

However, pairedness still remains an issue if morphological markedness is to play any role. The child has to learn that there is a relation between, e.g. *čitatⁱ* 'read' and for instance *pročitat^p* 'read', *perečitat^p* 'read through'. The perfective verbs which are derivatives of the imperfective simplex verbs are the morphologically marked members. In some instances the perfective forms can substitute the imperfective verb form, which is rather broad in meaning.

Instead of assuming the strict criterion of semantic identity, I take a more descriptive approach to the system, without working with a predefined category of pairs. Thus, instead of excluding a very large number of verbs, I propose accounting for the different types of relations encountered in the Russian aspect system. The system I propose is a continuum of aspectual pairs with different strengths of semantic connectedness (cf. Figure 5.2). On one end of the continuum we have pairs whose partners are identical in lexical meaning in only some contexts and on the other end there are pairs where the meaning is identical in virtually all contexts.

Figure 5.2: Aspectual pairs



On the left side of Figure 5.2, there are pairs derived by **perfectivization**. I will call this type of pair **Type I**. Perfectivization is achieved by adding a prefix to the simplex verb. These prefixes often modify or change the meaning of the base verb and thus the Aktionsart of the verb. The new prefixed verb forms, which are perfective in aspect, are usually more specific in their semantics than the simplex verb form from which they are derived and may or may not have a secondary imperfective. The process is both lexical and grammatical. Different types of prefixes are at work, ranging from prefixes which change the meaning of the verb quite substantially, e.g. *pisat*ⁱ → *perepisat*^p 'copy' to so-called empty prefixes with a minimal or no meaning change, e.g. *pisat*ⁱ → *napisat*^p 'write'. The meaning of the two aspectual partners is lexically identical in some contexts, but not in all. In the semantic context in which the meaning is identical, the Aktionsart is identical as well. Simplex imperfective verb forms usually have a very broad meaning that can be used in many different contexts, and thus a simplex verb can have many perfective partners which carve out a specific meaning nuance that can be implied by the more general imperfective verb, e.g. *plakat*ⁱ/*zaplakat*^p 'cry/start to cry' or *plakat*ⁱ/*poplakat*^p 'cry/cry for a while'.

Verbal pairs in which the perfective partner has an empty prefix, e.g., *stroit*ⁱ/*postroit*^p 'build', are located on the continuum between pairs where the prefixes alter the meaning and Type II pairs, which are discussed below. The perfective partner with the empty prefix constitutes a pair with the imperfective simplex verbs, whenever the meaning and also argument structure and as a result also the Aktionsart

are the same. Perfective verbs which are derived from a simplex imperfective and have an additional secondary imperfective partner, e.g. *pit*ⁱ 'drink' → *vypit*^p '→*vypivat*ⁱ 'drink up' (iterative meaning) are also part of this continuum.

On the other end of the continuum, there are pairs which develop through (secondary) **imperfectivization**, e.g., '*perepisat*'-*perepis-yv-at*'.¹ These pairs are referred to as **Type II**. The meaning of the two aspect partners is identical. As shown before in Chapter 3, this group too is not homogenous in semantic behavior and is best described as a continuum.

The two major processes of Type I and II mirror the historical development of aspect (cf. also Maslov 1956:561).² In a first stage in the development of aspect, simplex verbs became prefixed. These prefixes implied a meaning change and at the same time the aspectual behavior changed. Only in a second stage did suffixation come into play, and as a result, lexical identical pairs developed with a complementary distribution of the perfective and imperfective aspect (cf. Bermel 1997).

Equipped with this continuum of pairedness, we can explicate the notion of morphological markedness more precisely. If we assume that there are two types of pairs, i.e., Type I pairs developed by perfectivization and Type II pairs developed by imperfectivization, a systematic explanation of the morphological aspect markers is possible.

For Type I (simplex verbs and derived perfectives), the imperfective verb is the morphologically unmarked member of the opposition, and the perfective verb is the marked form, i.e., the perfective form is prefixed and hence has one morpheme more than the simplex verb from which it has been derived, e.g., *smejat*'*sjd*ⁱ/*zasmejat*'*sjd*^p 'laugh/start to laugh'. Thus, the simplex verb forms are morphologically unmarked.

¹ In this classification I focus only the productive processes of imperfectivization and perfectivization. Thus, for present purposes I exclude irregular verbal pairs such as suppletives and pairs where the partners are distinguished by stem alternation, which are of course also part of the continuum.

² The necessity of distinguishing these two processes was already recognized by Karcevski (1923: 495, 1927:96).

Concerning Type II pairs, which developed by secondary imperfectivization, the imperfective verb forms are the marked members, e.g., *perepisat*^p vs. *perepis-yv-at*^h 'copy', i.e., they have one morpheme more. Thus, morphological markedness is different for the two types of pairs. This is illustrated in Table 5.1.

Table 5.1: Morphological markedness in Russian

Aspect marking	Perfectivization (Type I)		Imperfectivization (Type II)	
Aspect type	Simplex verb	Derived perfective	Prefixed perfective	Derived imperfective (secondary imperfectivization)
Morphological markedness	unmarked	marked	unmarked	marked

Thus, both aspects can be formally marked or unmarked, depending on what type of pair they belong to. This is one of the major difficulties of the Russian aspect system: not only is there no single marker for aspect, but not even are there markedness patterns across all verb pairs. In addition, there are two groups of verbs that are outside this classification: suppletive pairs and pairs derived by stem alternation. The markedness relation is not privative for these groups, but equipollent. This is an additional complexity of the morphological system.

Interestingly, the bifurcation of the morphology of the aspect system shown in Table 5.1 corresponds to a bifurcation of Aktionsarten and their markedness relations. Verbs which belong to Type II are usually telic verbs, while Type I verbs are atelic. In Chapter 2, I hypothesized that the telic/atelic supercategorization of Russian Aktionsarten has cognitive reality. The morphological markedness pattern seems to confirm this hypothesis in showing that this semantic supercategorization has a linguistic correlate in the morphological marking.

2.2 Semantic markedness

As mentioned above, it is useful to distinguish two types of semantic markedness. First, there is the semantic markedness of perfective aspect as a

grammatical category independent of Aktionsarten. This is what I referred to as *general semantic markedness*. Second, there is semantic markedness of particular aspectual forms for specific Aktionsarten called *Aktionsart-specific semantic markedness*.

2.2.1 General semantic markedness

As we have seen in Chapter 1, Russian aspect is best considered to be a privative category with the perfective aspect as the semantically marked member of the opposition (Jakobson 1932). This type of semantic markedness holds consistently for the semantics of the grammatical category of aspect, independent of the semantics of the verb in question and independent of the context the verb appears in. This type of markedness is very general and applies equally to all perfectives and all imperfectives, independent of their actual verbal semantics.

General semantic markedness is important because it accounts for the fact that the perfective has a definite, cross-contextual meaning (highlighting of a boundary), whereas the imperfective has no such definite meaning.

2.2.2 Aktionsart specific semantic markedness

As discussed in Chapter 2, there are five Aktionsarten in Russian: duratives, ingressives, semelfactives, delimitatives and telics. Each of these Aktionsarten has a specific relationship to grammatical aspect. These five groups can be subdivided into two superordinate classes, namely [+telic] and [-telic]. Within the [+telic] group we find imperfective and perfective partners. Only for this group are there two aspectual partners with exactly the same semantics. Therefore the concept of Aktionsart-specific semantic markedness applies only to this group of verbs.

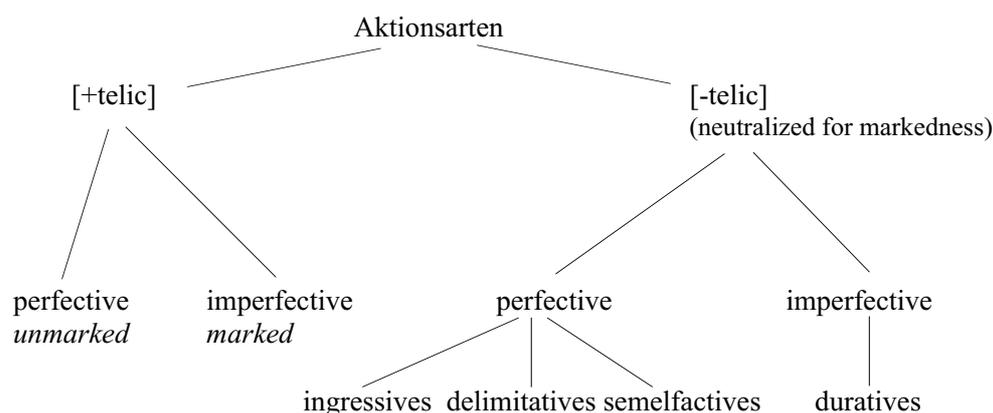
Duratives, ingressives, semelfactives and delimitatives are atelic. These Aktionsarten are predetermined for aspect and this neutralizes the Aktionsart-specific markedness opposition. Duratives are always imperfective, whereas the other Aktionsarten in the atelic group are always perfective. If a durative pairs up with another verb, there is automatically a meaning change and a change in Aktionsart

involved, e.g., *pisatⁱ* 'write' is durative, whereas the perfective partner *napisat^p* 'write' is telic.

For telic verbs the unmarked aspect is the perfective aspect. The default for such a verb is to activate the boundary inherent in the verbal semantics and this is done by the perfective aspect e.g., *vstretit^p* 'meet'. If the goal is to defocus the result of an action, the imperfective aspect has to be used (*vstrečatⁱ* 'meet'). This aspect is in a way contradictory to the verbal semantics of a telic verb, and the explicit exclusion of the boundary is the marked option.

Figure 5.3 summarizes the Aktionsart-specific markedness.

Figure: 5.3 Aktionsart-specific markedness



3. Contextual markedness

Another crucial factor is the textual context in which a form occurs, and the function it has in this specific context. This factor is especially important for the concept of contextual markedness, which is at issue here. The term *contextual markedness* is used here in the sense introduced by Chvany (1985): a more unexpected element of the binary opposition is marked, whereas the expected, more typical element is unmarked. A crucial property of this type of markedness is statistical frequency, which correlates with the expectations of the occurrence of a sign. The judgment as to whether a form is contextually marked is evoked by the experienced

frequency of that form in similar constructions. Levinson (1983) has introduced a similar idea for conversation analysis. He introduces the notion 'preference organization', meaning that there is a ranking of preferred answers in the second parts of adjacency pairs. Levinson equates the preferred second turns with unmarkedness. In a similar sense, the perfective aspect is the unmarked aspect in an utterance in which a sequence of actions is to be expressed. However, if the plot advancement is expressed by an activity verb, the perfective aspect is not an option, since activity verbs are always imperfective, and thus markedness is irrelevant in this context.

In the following, I focus on the markedness pattern of one very specific context, namely past narration. I chose this context because the role of aspect for grounding in a text is an important factor for aspect usage in general (Hopper 1979, 1982, Chvany 1985). Another reason for the choice of this context is that it is relatively easy to test in an experiment starting with very young children, as will be shown in Part II of this dissertation.

One of the main functions of a narrative is plot advancement. A plot usually develops in several steps with events happening one after the other. Such a sequence is typically expressed with verbs in the perfective aspect. As we saw in Chapter 1, there seems to be a strong correlation between the perfective aspect and the expression of sequentiality in a text. While sequentiality is not part of the meaning of the perfective aspect, it is certainly one of its important functions, if not the most important function, in a narrative text. A certain aspectual form is contextually unmarked, if it corresponds to the usual, default expectation of the listener in a certain context.

How can we apply the concept of contextual markedness to grounding in a text? As shown in Chapter 4, narratives are usually structured two-dimensionally in foreground and background (with possible substructures). In narratives, foregrounding can generally be equated with plot advancement.

Hopper (1979) has claimed that for Russian the perfective aspect is used for foregrounding, whereas the imperfective aspect describes action in the background and is hence mainly used for scene descriptions. Chvany (1985: 260 ff.) emphasized

that this is to be understood as a statistical tendency, i.e., the correlations are not absolute but predominant. There are, thus, exceptions to this general tendency, i.e., there are cases where the imperfective aspect and not the perfective aspect is used for plot advancement. An example for such an exception is shown in (1).

- (1) *Bol'soj medved vzja^l svoju čašku, vzgljanu^l i zareve^l strašnym golosom.*
 – *KTO XLEBALⁱ V MOEJ ČASKE!*
 'The big bear took his bowl, looked inside and roared in a terrible voice:
 WHO HAS BEEN EATING FROM MY BOWL?!'
 (Tolstoj, *Tri medvedja*, cited after Chvany 1985)

This example illustrates that both the perfective aspect, as in the narrator line, and the imperfective aspect in the direct speech of the bear can be used to advance the plot. The imperfective aspect here is used to ask about a fact. This fact, however, is decisive for the advancement of the plot.

Further, there are cases where the perfective aspect is used for a scene description, i.e., to describe the background. These cases are much rarer. Example (2) illustrates this function of the perfective aspect.

- (2) *Pavel Petrovič ne odnogo večera ne provodilⁱ doma, slavilsjaⁱ smelost'ju i lovkos'tju (on vve^l bylo gimnastiku v modu meždu svetskoj molodež'ju) i pročel^l vsego pjat'- šest' francuzskix knig.*
 'Pavel Petrovič did not spend a single evening at home, he was famous for his courage and his adroitness (he brought gymnastics into fashion among the youth of the society), and he **read** only five to six French books.'
 (Turgenev I. S. *Otcy i dety*, p.25)

The imperfective aspect would not even be possible in this example; at least it would have a different meaning. Here, *pročel^l* 'read' emphasizes the fact that he finished the books. The imperfective aspect would lack this meaning, and an interpretation that he had read only part of the books would be possible as well. The perfective aspect in this example is part of a larger scene description.

This shows that it is possible to use the perfective aspect in a background description. But even if there are some counterexamples, the general statement that the perfective aspect is predominantly used to advance the plot is certainly true.

Otherwise we could not explain the effect of the following example (3) cited in Chvany (1985):

- (3) *Zadušiv ego, ona bystro ložitsjaⁱ na pol ...*
 After smothering him, she quickly lies down on the floor...
 (Cexov, "Sleepy" [*Spat' xočet'sja*] cited after Chvany 1985: 249).

The effect of example (3) is striking. Usually we expect the perfective aspect to dominate the plot line and thus be in the main clause. Background information is usually given in subordinate clauses. In example (3) Chvany shows how the departure of this expectation can be used by an author to obtain a stylistic effect. The horrific deed of suffocating the child is put to the background in using a perfective participle in the subordinating clause, whereas the possibility of the nanny to finally lie down and rest is put in the foreground with an imperfective verb in the present tense. Sleep became more important for the nanny than the life of the child. The strong effect of this sentence is due to a combination of the content of the verbs and the unusual use of aspect in the clauses they appear in, which can only be obtained in departing from the ordinary expectations of the reader. Thus, foregrounding in a text is relative to the context, but there the reader has strong expectations, which are a prerequisite for the author to obtain a certain stylistic effect.

Interestingly, the statistical correlation of perfective with foreground is much greater than that of imperfective with background (Chvany 1985). Why should this be the case? In the remainder of this section, I will attempt an answer.

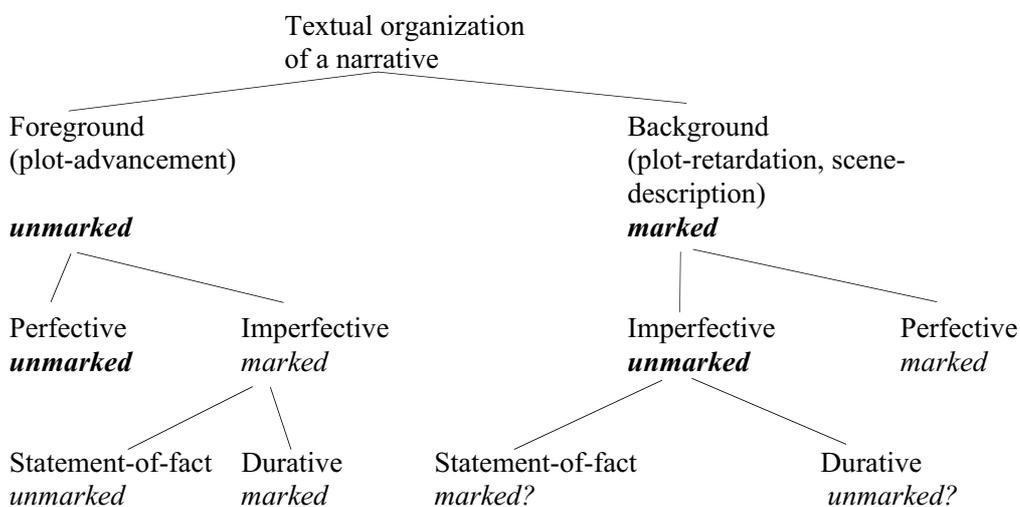
For Russian, I have shown above that for verbs of Type II, i.e., verbal pairs which were developed by imperfectivization, the perfective aspect is the morphologically and semantically unmarked member of the opposition. The same is true for contextual markedness in narratives. The perfective aspect of this verb type is the default aspect for plot advancement. Thus the perfective aspect of Type II verbs is unmarked on all levels of markedness, inherent and contextual.

The imperfective aspect, by contrast, fulfills two major functions: on the one hand, it is most often used to describe scenes and ongoing actions in the background, which go on simultaneously with other actions in the foreground (cf. Hopper 1979).

On the other hand, the imperfective aspect can also be used to describe an event in the foreground. This corresponds to the fact that the imperfective aspect is the general-semantically unmarked member of the opposition. The backgrounding function of the imperfective aspect is very important for the formal marking of the two-dimensional discourse structure, i.e., the foreground/background articulation of a text. Used for events in the textual foreground, the imperfective is usually, but not always, neutral with respect to the internal structure of the event, and this largely corresponds to what is called the statement-of-fact or '*obščefaktičeskoe*' function of the imperfective aspect (cf., e.g., Comrie 1976, Forsyth 1970). Sometimes, however, currently ongoing actions are put into the foreground, and they can only be expressed with the corresponding durative (or cursive, or progressive) function of the imperfective aspect. Thus, there is considerable overlap in the functions of the imperfective aspect. Both foreground and background can associate with the durative or denotative uses of the imperfective. If we consider the fact that for Russian most simple verbs do not have a pure perfective partner, it becomes clear why the imperfective aspect indeed must be able to take over the function of plot-advancement. Otherwise, it would never be possible to use a simplex activity verb to advance the plot in a story and this would be an awkward situation for a language.

Figure 5.4 illustrates the different narrative functions of the two aspects in Russian.

Figure 5.4: Textual organization in Russian



As mentioned before, the main goal of a narrative is typically to develop a plot. Thus, plot-advancement can be called the unmarked function in a narrative text, whereas plot-retardation or scene description (i.e., backgrounding), which can be defined as stepping back from the story line in a text and describing the context, is the unmarked function. If we consider now the aspectual forms used for these two textual organization cues, it turns out that the perfective aspect is the pragmatically unmarked member for plot advancement, i.e., the default for advancing the plot. A special role is played by telic verbs, which are most important for plot-advancement. Goals and results are most relevant for human conceptualization, and narratives usually focus on goal-directed actions that are sequenced in time and constitute a story line.

However, telics are not the only Aktionsart that are important in plot-advancement. All other Aktionsarten that imply a change of the situation, i.e., semelfactives, ingressives and delimitatives, are used for foregrounding as well. Ingressives, for instance, play an important role in narratives by often preparing the climax of what is expressed by a telic verb.

- (4) *Pod utro lesnaja dolina zaklubilas^p bystro gustejuščim tumanom, i čerez paru časov volnistaja mgla poglotila^p vse vokrug.*
 'Towards morning the valley began to be rolled over by dense fog and within a couple of hours a wavy haze swallowed everything around.'
 (Uppsala Corpus, Kamil' Ziganšin, *Bocman*, 1992, p.1)

For plot advancement, change-of-situation verbs seem to be more typical and more often used than other verbs, such as activity verbs.

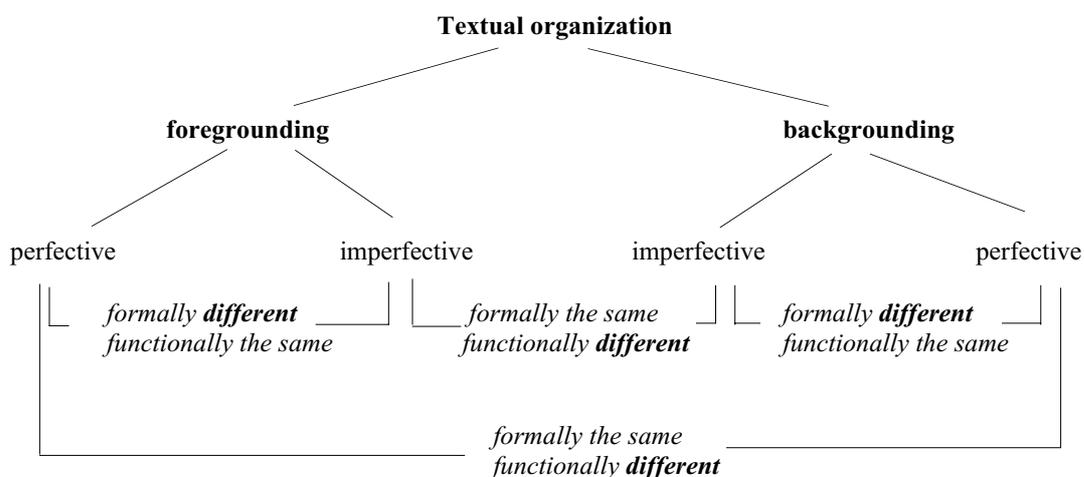
If we move up the branches from bottom to top in Figure 5.4, the branch with the largest number of 'unmarked' nodes is the perfective aspect, and this aspect is also the typical aspect for the advancement of a plot. The imperfective aspect, when used to advance the plot, is the marked member of that opposition. And the statement-of-fact function is here more typical than the durative function.

For the backgrounding function the opposite is true. The imperfective aspect is the unmarked member, and the perfective aspect is highly marked and hence very rare. The markedness pattern of the two functions of the imperfective aspect (within

the backgrounding branch in Figure 5.4) are also reversed in their markedness. The durative function of the imperfective in the backgrounding branch has the most unmarked nodes within this branch. However, I have not yet investigated the markedness pattern of this function in comparison to the statement-of-fact function, and hence I can only make an impressionistic guess. One would have to undertake detailed discourse analysis before making an ultimate statement about this markedness pattern.

The use of the perfective aspect for simultaneous actions or actions in the background is in a way also contradictory to the semantics of the perfective aspect and hence such an occurrence is very rare. On the one hand, one and the same aspect form can take on different functions and on the other hand, different forms can express the same function. This pattern is illustrated by Figure 5.5.

Figure 5.5: Forms and functions of Russian aspect



In the following, I discuss the features in Figure 5.5, starting with the two functions of aspect. As shown in Figure 5.5, both the perfective and the imperfective aspect are used for foregrounding. They are formally different, but functionally they are the same when used for foregrounding. The backgrounding function can also be expressed by the perfective and the imperfective aspect. Again they are formally different, but functionally they are the same. Thus, the imperfective aspect is used for foregrounding and backgrounding, and the same holds true for the perfective aspect.

Now let us look at Figure 5.5 focusing on the aspectual forms. The imperfective is used for foregrounding and backgrounding. The form here for these two functions is obviously the same, but the function is different. The same holds true for the perfective aspect. Figure 5.5 makes explicit why the Russian aspect system is so intricate and indeed often claimed to be unlearnable by foreigners. The multiple correlations of form and function make the system itself very complex, and presumably difficult to learn.

In the following I try to show how the concept of markedness can be useful in an analysis of the acquisition process.

4. The role of markedness in language acquisition

The approach outlined above suggests how Russian aspect can be analyzed in terms of markedness. This theory can also be fruitfully applied to the acquisition process of Russian aspect. The crucial point here is the distinction between inherent and contextual markedness. One of the main features of inherent markedness is its independence of frequency. Both Trubetzkoy (1958) and (Jakobson 1932) emphasized that markedness is independent of frequency relations. This applies to what I have subsumed under general semantic markedness, or systemic markedness (in Figure 5.1). At the same time, there is another type of markedness, contextual markedness, which is defined in terms of frequency. Frequency, however, is best discussed in a context-specific manner, not as a general concept. What is more frequent in one context can be less frequent in another context. Since children encounter language always in specific contexts (e.g., feeding, story telling, arguments, dinner table conversations, etc.), it is worthwhile to be specific about context in discussing frequency. The specification of context is important because we simply cannot assume that if a child learned a form in one context, s/he is able to immediately abstract its usage to all other contexts.

Greenberg's observation (1966b: 60) that there is a similarity between the marked and unmarked relation in linguistics and the distinction in Gestalt psychology

between figure and ground can be fruitful for a language acquisition study of aspect. But before going over to language acquisition let me briefly discuss the comparison offered by Greenberg and elaborated by Andersen (1989: 38 ff.). In visual perception the figure is included in the ground, but figure and ground are in fact experienced as contradictories. Once this distinction has been established, it is easier to recognize differences in saliency between ground and figure. As Andersen states: "considering the fundamental importance of the figure-ground distinction for perception, it is not surprising if the most basic paradigmatic relation, the inclusive opposition, is founded on a homologous cognitive operation." (Andersen 1989: 40).

This figure/ground metaphor seems to be very well suited for a language acquisition study of aspect as well. First the child encounters utterances without being able to understand their meaning or their relevance. Then, in a very slow step-by-step process the child discovers a distinction between "figure" and "ground" in certain contexts, i.e., she discovers whether the perfective or the imperfective aspect is the unmarked member in a given context. When this is done, further differentiation can take place. This differentiation takes place in the unmarked member of the opposition. Note, however, that this perception of linguistic 'figure', i.e., the marked member of the opposition, and linguistic 'ground', i.e., the unmarked member of the opposition, and the further differentiation of the ground are bound to a specific context, which is still unrelated to other contexts. Only in a later step is the semantic concept of marked/unmarked or figure/ground established independently of a specific linguistic context.

The term markedness has been around for quite some time in language acquisition studies. There seems to be widespread agreement across theories that unmarked forms are acquired first and more easily than marked forms (e.g., Clark 1970, Kiparsky 1974, Chomsky 1981b). Usually no distinction is made between inherent markedness and contextual markedness. The term markedness is most frequently applied to what I called inherent markedness. The distinction, is, however, crucial, because what we ultimately want to do in a language acquisition study is to explain, or at least explicate, how a certain category is developed. If we talk about

inherent markedness and simply state that the child learns the unmarked member of the opposition first, we have to give a theoretical explanation of how the forms are learned, i.e., how the child recognizes what is figure, i.e., marked and what is ground, i.e., unmarked. Since inherent markedness is independent of frequency, we need to find another explanation for why the child learns the unmarked form first. If we assume that there is something like contextual markedness, which ultimately relates to inherent markedness, the acquisition process can be explained via the input, i.e., unmarked forms can be expected to be more frequent in the input.

The forms that are least marked in the context of past tense narratives are simple imperfectives and perfectives of Type II, i.e., telic perfectives, which have a imperfective partner derived by secondary imperfectivization (cf. Section 2 above). Simple imperfectives are morphologically unmarked. Further, they are contextually unmarked for backgrounding in a narrative. As for telics, the perfective aspect is morphologically unmarked. This is in contrast to the perfective partners of non-telic verbs, which are always morphologically marked. The telic Aktionsart is the only Aktionsart that has an Aktionsart-specific markedness opposition. Within this opposition the perfective aspect is the unmarked member (cf. Figure 5.3). Further, with respect to contextual markedness, perfectives are unmarked on the account that they are the unmarked aspect for foregrounding.

If it is true that the most unmarked forms are the most frequent forms, we also should encounter this correlation in a corpus of adult Russian. And in fact, as we have seen in Chapter 3, Forsyth's (1972) analysis of Štejnfel'dt's (1963) data shows that simplex imperfectives and prefixed perfectives are the most frequent verb forms encountered. The data examined by Forsyth are all written data, belonging more or less to one text type, namely literary texts. In Part II of this study, I will show that this statement holds true for spoken data consisting of concatenated utterances as well. At the same time it will become clear that we indeed need to be aware of the discourse complexity involved, because secondary imperfectives are probably far more common in isolated utterances (which constitute self-standing narratives) than in a

longer narrative consisting of concatenated utterances. This shows that the context is vital for an acquisition study.

Part II

The Acquisition of Russian Aspect

Chapter 6: Comprehension of Isolated Utterances (Level 1)

1. Introduction

The purpose of this chapter is to investigate how Russian pre-school children develop their understanding of aspectual forms. There are two possibilities for how the acquisition of aspect can be explained: either aspect is primitive or it is learned. If aspect is primitive, then it could either be an innate category, or it could be that it is developed in a single instantaneous step, for instance, on the basis of input or from general pragmatic competence or prelinguistic abilities. My experiment shows that in Russian the grammatical aspect opposition between perfective and imperfective is not primitive in either the sense of being innate or of being developed in a single step. Rather, the acquisition of aspect relies on an increasing competence in the differentiation of Aktionsarten, i.e., of temporal features like 'telic', 'ingressive', 'semelfactive', etc., that are lexically inherent to Russian verbs. I show that one Aktionsart, viz. the telic Aktionsart, plays a primitive role in this development. It is likely, however, that this Aktionsart is derived from early pragmatic competence and does not need to be postulated as innate. The importance of telicity has already been discussed in great detail in the literature on the acquisition of tense. It has been shown convincingly that telicity plays a significant role in the acquisition of tense in an array of languages (cf., for instance the classical studies of Bronckart and Sinclair 1973, on French, and Antinucci and Miller 1976 on Italian).

Two hypotheses with several sub hypotheses are tested in this chapter. The first hypothesis is that aspect is a primitive category, i.e., an innate category or a category developed in a single leap (Hypothesis 1). The counterhypothesis is that aspect is learned (Hypothesis 2). If Hypothesis 1 is falsified, the second step then is to find out

whether the development of aspect understanding is uniform, i.e., the same for all verbs (Hypothesis 2.1), or whether it is dependent upon morphological (Hypothesis 2.2.a) or semantic, i.e., Aktionsart-based properties (Hypothesis 2.2.b).

To test these hypotheses, an experimental method with motion pictures was developed. Since it is often claimed that aspect is acquired at very early ages, it was necessary to use a special technique to test the aspectual understanding of children from 2 years of age onwards. For that reason I developed a video technique, described below in Section 5, which makes the testing of these hypotheses feasible for all targeted age groups, i.e., from age 2 to 6.

The only experimental studies of aspect acquisition in a Slavic language were conducted by Weist and colleagues (1983, 1984, 1985) on Polish. The Polish aspect system is very similar to Russian. In analyzing their results of a production experiment and three longitudinal studies, Weist, *et al.* (1984: 370) claimed that aspect is primitive in child Polish. To test the understanding of aspect, Weist (1983) used picture tests to find out whether children from 2 years of age onward are able to understand the distinction between perfective and imperfective aspect. However, he restricted his studies to only one Aktionsart class, namely telic verbs. Since the perfective vs. imperfective distinction applies to the whole verbal lexicon a large group of verbs remained outside the scope of Weist's investigation. A complete acquisition of aspect is demonstrated only if children can be shown to understand aspectual values with verbs of all Aktionsarten. From the analyses of their longitudinal data (Weist, *et al.* 1984: 367, Table 7) it becomes clear, however, that there is a different correlation of aspect use depending on Aktionsarten. Verbs of the telic Aktionsart (achievements and accomplishments in Weist's terminology) are preferably used in the perfective aspect. Within the durative Aktionsart (states and activities in Weist's terminology) children do not have an aspectual choice, these verbs are always imperfective. However, they have a choice of tense and within this group, children use the present tense more frequently than the past tense. Thus the studies of Weist and his colleagues are not fully conclusive as to whether aspect is

primitive or not. Their analyses seem to be compatible also with a view that assigns the telic Aktionsart a key role in the acquisition of aspect.

Up to now, Li (1989) has conducted to my knowledge the only study that investigates systematically the understanding of different Aktionsarten. Li studied the acquisition of Mandarin aspect. In his study he conducted three experiments, one on comprehension, one on production and one on the imitation of aspectual forms. He showed that the comprehension and production of Chinese aspect markers depends on the Aktionsart of the verb (Li 1989).

This chapter is organized as follows: First, I introduce the hypotheses investigated. Second, the design of the experiment is described, which tests the hypotheses. Third, I present the results of the experiment. Fourth, I discuss the results and fifth, I offer some conclusions.

2. Hypotheses

As mentioned above, one of the main issues in the acquisition of aspect is whether aspect is a primitive category or whether children must actually learn aspect. These two main positions define the framework of this chapter.

Hypothesis 1: The Primitive Category Hypothesis

Aspect is fully understood from the very beginning of language acquisition, because it is either innate or developed in one single step (on the basis of the input or general pragmatic competence or prelinguistic abilities, etc.).

Hypothesis 2. The Development Hypothesis:

Aspect is learned and there is a significant development over time.¹

¹ The learning hypothesis does not exclude the possibility that there is a privileged starting point in one direction or another. It would be possible that children generalize from this knowledge and start the learning process in that way. See Section 7 for further discussion.

If Hypothesis 1 is falsified, Hypothesis 2 will be supported. Then there are two possibilities for how the development postulated by the alternative hypothesis may look:

Hypothesis 2.1: The Uniformity Hypothesis

The development is uniform, i.e., there is a quantitative improvement over age, but this improvement is the same across all verb types.

Hypothesis 2.2: The Non-Uniformity Hypothesis

The development is non-uniform, i.e., there is a quantitative improvement over age, but the development takes place at differential rates for diverse systemic variables, – faster for one set of linguistic elements, slower for another.

Whether one of these two hypotheses (Hypothesis 2.1 or Hypothesis 2.2) holds will be tested indirectly, namely by testing two possible factors for differential rates of development. There are two likely candidates that could influence the understanding of aspect, namely the morphology of the verb and the Aktionsart of the verb. If one of these sub-hypotheses proves to be true, the Uniformity Hypothesis (Hypothesis 2.1) can be considered falsified. The sub-hypotheses are:

Hypothesis 2.2a: The Morphology Hypothesis

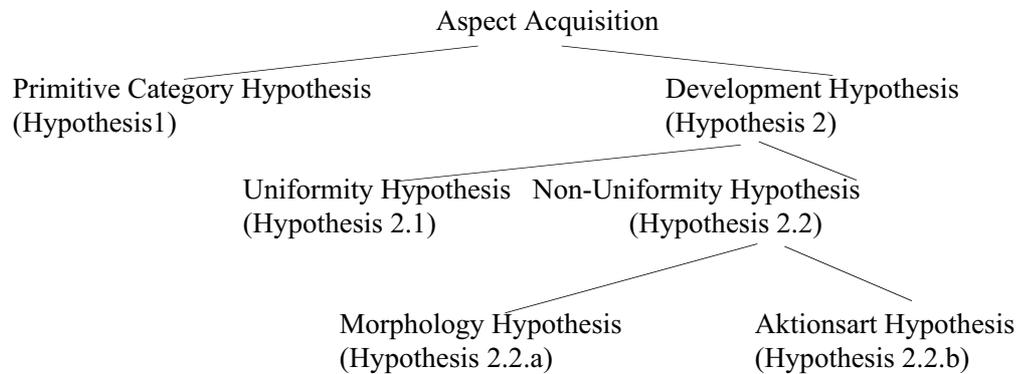
The rates of development differ for the different formal, i.e., morphological, classes of verbs.

Hypothesis 2.2b: The Aktionsart Hypothesis

The rates of development differ for the different semantic, i.e., Aktionsart-based, classes of verbs.

The logical connections between these hypotheses are summarized by Figure 6.1.

Figure 6.1. Logic of the hypotheses tested



As mentioned in the introduction to this chapter, the research by Weist and colleagues (1983, 1984, 1985) is inconclusive about level Hypothesis 2.2 since his experiments are limited to telic verbs. Their longitudinal studies, however, show some support for the Aktionsarten hypothesis. Li's (1989) comprehension experiment also supports the Aktionsart Hypothesis.

3. Design of the experiment and procedure

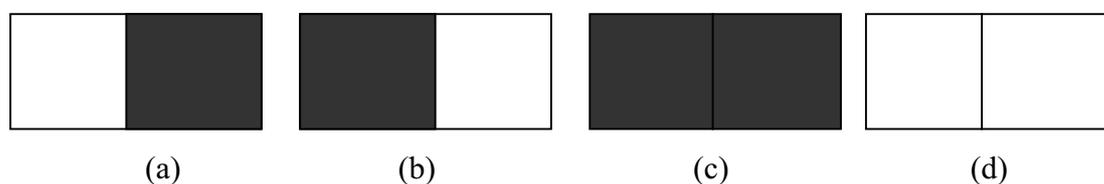
The general idea of the experiment is to test whether children of different age groups understand aspectual forms with different morphological marking and different Aktionsarten. By varying both the morphology and the Aktionsarten, I was able to test both the Morphology Hypothesis (Hypothesis 2.2a) and the Aktionsart Hypothesis (Hypothesis 2.2b) in a single experiment.

To test whether aspect is acquired as early as claimed by some studies (e.g., Weist, *et al.* 1984), it was necessary to develop an experiment which children from age 2 years onwards would be able to perform. Because of the difficulties of working with very young children, most studies of aspect have started with children between 3-4 years of age (with the notable exception of Weist 1983, Weist, *et al.* 1984). To overcome the difficulty of conducting experiments with 2-year-olds, I worked with video stimuli. Up to now, most studies of aspect have used static pictures. Static

pictures, however, cannot capture the dynamic temporal structure of a situation, which is crucial for aspect. The temporal structure in a picture task has to be inferred by the reader, but it is not actually depicted. This is a major problem if one works with very young children. Most 2-3 year olds are not yet familiar with the structure of picture books and the way they are meant to be understood. Instead of understanding that there is a story being told, they often take each picture as an independent unit unrelated to the other pictures. Thus, instead of recognizing the action of the protagonist as distributed over several pictures, they take the depiction of the protagonist in different pictures to represent different persons who just happen to look alike. With videos, such problems do not arise, because in a movie the temporal structure of a situation is continuously present and does not have to be derived by inference.

The experiment itself took the following form. Every child was shown 24 short video clips, each illustrating what would be described by a different pair of verbs. The verbs were chosen according to the classification of morphological markers and to the Aktionsart classification. Only very simple base verbs were included in order to make sure that the difference in the results is not due to variation in lexical competence. The full list of verbs is given in the appendix. In every video clip there are two puppets (named 'Maša' and 'Toša') who are the protagonists of the scenes shown to the children. The schema of the video clips is shown in Figure 6.2.¹

Figure 6.2: Schema of experimental set-up



Every Aktionsarten group was represented by several video clips (listed in the Appendix). For the telic group a clip would look as follows: First (Figure 6.2a), on the

¹ For technical reasons only the middle part of the screen was used for the video clips. The stripes above and below were invariably of green color.

left half of the screen one puppet (e.g., Maša) acts out a situation that normally would be expressed by an adult native speaker by means of an imperfective verb, e.g., continuous reading of a book. During the display of this scene the other half of the screen is black. After that Maša's half of the screen turns black and on the other side of the screen, i.e., on the former black side, Toša appears and carries out the same action, but in such a way that the action would normally be expressed by a perfective verb (Fig. 6.2b), Toša in the instance given reads the book all the way through and closes the book. After a short distraction period, during which the screen turns black for three seconds on both halves (Fig. 6.2c) both actions are shown again simultaneously on a split screen and then stop in a frozen frame (Fig. 6.2d). At this point one of the two experimenters (a native speaker of Russian) asks the child who, i.e., which puppet, did something, in this example *Kto pročita^p knigu?* 'Who read the book?'.¹

The procedures are the same for the other verb classes, i.e., delimitative, ingressive, and semelfactive verbs. The only difference is the type of action acted out in the clip and the corresponding verb types in the questions. For a delimitative verb, the video clip would proceed as follows: First, one puppet say Toša, appears on the left half of the screen and acts out the scene corresponding to the delimitative verb *posidet^p* 'sit for a while', i.e., first he stands, then he sits for a little while, and then he gets up again. After that, the picture disappears and the other puppet, i.e., Maša, appears on the right half of the screen. In this picture, she is sitting all the time, so that the event would correspond to a description with an imperfective verb. Finally, this picture disappears as well and after the distraction period both pictures are repeated simultaneously on the screen. When the pictures freeze, the experimenter asks the child *Kto posidet^p?* 'Who sat for a while?'. An example of the ingressive group is a scene where one of the protagonists starts crying during the clip, whereas the other protagonist cries all the time. The question would be *Kto zaplakal^p?* 'Who started

¹ One of the puppets was a female and one was male. This was due to the availability of stimuli material. To be able to ask nonetheless a neutral question (in Russian gender is marked at the verb in the past tense) I chose the names in a way which would allow one neutral question, namely the masculine variant. The analysis of the data showed no correlation between the gender of the puppets and children's responses.

crying?'. In a film of the semelfactive group, one of the protagonists, e.g., waves once with one hand, whereas the other protagonist waves throughout his presence on the screen. The question then would be *Kto maxnul'*? 'Who waved once?'

In all the films the questions were asked in the perfective aspect, because the imperfective aspect is ambiguous, due to its unmarked nature (in the sense of general semantic markedness, cf. Chapter 5). That is, it would be correct to describe either of the two pictures with the imperfective aspect. Hence, there would be no right/wrong choice and the analysis would have been much too complex. The child was asked in the instructions to choose between the two protagonists by telling the name of the protagonist. Some of the 2-year-old children preferred to point at their choice on the screen. These answers were also accepted. While in most films, questions had the form described above, in two cases (illustrating a telic and a semelfactive verb, respectively), the questions were replaced by locational questions of the form *Gde V X?* 'Where [i.e., on which screen] did X do Y?' (see Appendix). This was done in order to stimulate attention by avoiding monotony. For the same reason, in one film (with semelfactive Aktionsart), the puppets were replaced by a different puppet, representing a monkey. Reducing the number of protagonists in this way was made possible by the locational question type (viz. *gde prygnula' obez'janka* 'where did the monkey jump?'). Neither variation, the question type nor the number of protagonists, had noticeable effects, but they helped very well avoid disengagement.

To avoid bias in the experiment, it was necessary to randomize which puppet acted out the action corresponding to the question in the perfective aspect. Otherwise one could not be sure that the child chose the correct answer because of her knowledge; it might as well be that the child simply prefers one puppet over the other.¹ Furthermore, I randomized the sides of the screen on which each puppet appeared. Thus, Toša and Maša appeared randomly on the right and left side of the screen across scenes. However, during a single scene the two protagonists did not switch sides. Every scene was copied onto one video cassette each and the order of

¹ However, four children (two 2-year-olds, one 3-year-old and one 5-year-old) had to be excluded from the experiment, because they showed an exclusive preference for one protagonist.

presentation was different for every child. Before the experiment was conducted the order of films was randomly chosen for each child.

In all, 100 children took part in the experiment. The children were recruited from several kindergartens in the center of St. Petersburg. Unlike other big cities of Europe and the US, there was no correlation in St. Petersburg between the area somebody lives in and the socio-economic status, at least at the time of the study (1995). Thus the sample comes fairly close to be truly random. The age range was from 2 to 6 years, with 20 children in each age group (10 girls and 10 boys in each group).¹

To compare the results of the children, I had a control group of five adults. The adult responses were as expected, i.e., all the adults chose the intended scenes. The results of the adults confirmed the intuitions of the native speaker I consulted in designing the experiment. This is especially important to note with regard to those scenes that a priori one could think of as inviting alternative interpretations. For example, one could argue that a continuous event invites an ingressive interpretation, since everything that continues at the time of speaking also had a beginning at some earlier point in time. However, none of adults in the control group spontaneously volunteered such an interpretation.

The experiment consisted of at least two sessions for each child. For the very young children the experiment had to be distributed over three to five sessions. Each session lasted from 10 to 20 minutes. The sessions took place on different days in a separate room in a nursery school in St. Petersburg. Each child was tested individually. Two experimenters conducted the tests: myself and an assistant who was not explicitly familiar with the research goals. The assistant was a native speaker of Russian and she was responsible for the interaction with the child during the experiment. I took care of the technical procedures and talked to the child before and after the experiment. The assistant was provided with a written copy of the instructions for the child which were simple enough to be understood by 2-year-olds. She read the instructions slowly to the child and asked then whether s/he understood the task. In these instructions, first the two protagonists (Maša and Toša) were

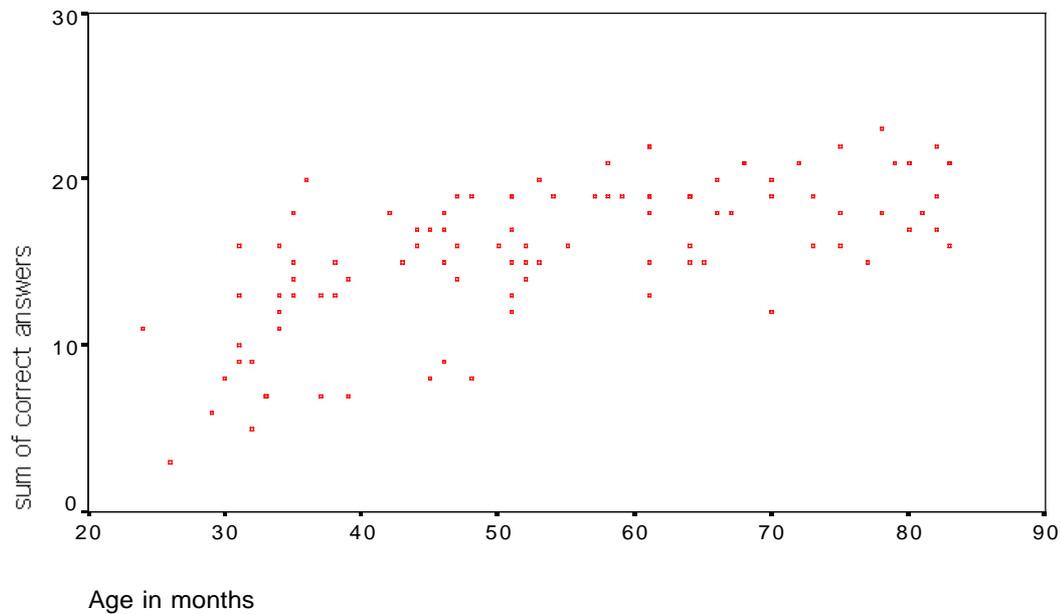
¹ One 6-year old had to be excluded, because it turned out in the analysis of his data that he child invariably chose the right-hand picture.

introduced. Then the child was told that a short video clip would be shown in which the protagonists would take part and that later a question would be asked about the clip. Every child was given three sample scenes to become familiar with the procedure. These scenes were not evaluated. The experimenter repeated the names of the protagonists for the first several clips to make sure that the child was familiar with them. In the distraction period, just before the repetition of the scenes, i.e., while the screen was black, the experimenter told the child that now both of the pictures would appear again. This was done to make sure that the child did not think of them as new pictures. Before each new film the child was told that now some new scenes would be shown. The test questions and the instructions were read slowly by the assistant from a print-out keyed to the sequence of movies. The instructions and the whole procedure were tested in a pilot study. The answers children's answers were recorded on video and at the same time, I noted down the answers blindly, i.e., without knowing and seeing which scene was shown.

4. Results

The *Primitive Category Hypothesis* (Hypothesis 1) proposes that aspect is an innate, or at least a primitive category in the senses indicated in the introduction, i.e., children understand aspect from early on. In a first analysis, I looked at the correct vs. incorrect answers across age. If Hypothesis 1 were true, the percentage of correct answers should not differ significantly across age groups. Furthermore, the percentage of correct answers would have to be nearly 100% if aspect were an innate category or at least derived in a single step at some age. This would not necessarily be the case for the youngest age tested. In principle, it could be that the percentage of correct answers was low in the youngest age group, and then abruptly jumps to about 100% at some age. If we look at the overall results of this comprehension test, *The Primitive Category Hypothesis* is clearly falsified. Figure 6.3 shows the general development across age.

Figure 6.3. General results: Mean percentages of correct answers



The correlation between age and the number of correct answers given (out of 24 scenes) is confirmed by the Spearman correlation coefficient, a non-parametric test. Since we cannot assume a normal distribution or a monotonic growth curve and the number of items tested is small, I had to use a non-parametric statistics. The results indicate that the hypothesized independence of variables can be considered as falsified at any reasonable level of significance ($r=.6706$, $p=.000$). There is thus a clear positive correlation between the two variables, i.e., there is a clear-cut development across age. These findings confirm *The Development Hypothesis* (Hypothesis 2) and falsify *The Primitive Category Hypothesis* (Hypothesis 1).

A further interesting developmental finding is the type of wrong answers which were given by the children. There are two types of wrong answers: on the one hand, there are 'straightforward' errors, in which the child simply pointed to the wrong picture. On the other hand, there is a second type of wrong answer, in which the child chose both pictures. Either the child indicated verbally that she meant both protagonists or she pointed to both pictures (either with both hands or with one hand

pointing to each picture in a succession without hesitating; hesitation might have been an indicator for the child changing her mind, instead of meaning to indicate both protagonists). This option was neither offered nor denied by the instructions and proved to be especially interesting. It shows that for some children there is no difference between the two pictures that would correlate with an aspectual difference expressed by verb forms. We first examine the outcome of the data if we assume age groups as it is common practice in language acquisition research. The kind of mistake that children make seems to depend on age, too, (cf. Figure 6.4).

Figure 6.4. Mean Percentages of two types of wrong answers

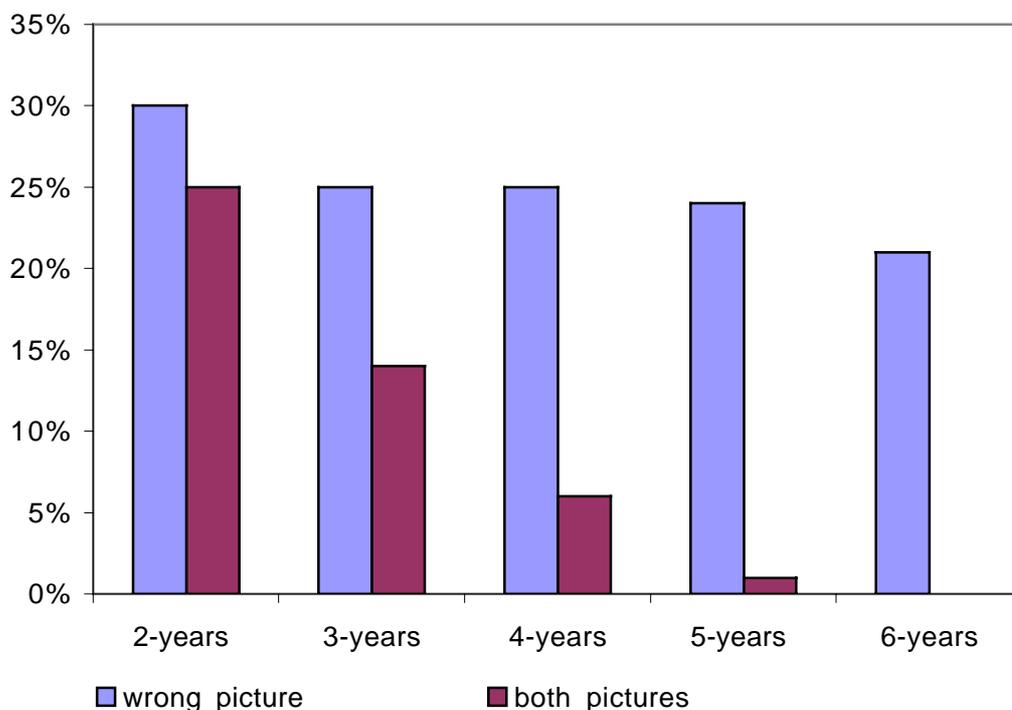


Figure 6.4 depicts the mean percentage of two types of wrong answers. Firstly, the choice of the wrong picture is shown, and secondly the choice of both pictures. Interestingly, the of the choice of the wrong picture correlates better with age ($r=-.6706$, $p=.000$) than the choice of both pictures ($r=-.5634$, $p=.000$) as shown by the Spearman correlation coefficient. This is not what the Figure would suggest. As shown in Figure 6.4, in a large number of cases children between 2 and 4 years of age do not see a difference between the two situations or do not correlate the difference

with the verb forms. Two of the 2-year-olds indicated straightforwardly that they did not know the correct answer in one and in four instances, respectively.

At first glance, an explanation for these observations might be that those children who chose both pictures simply did not understand the experimental set-up. If these children did not understand the set-up, however, one would expect totally random responses. As we will see below, the mean percentage of correct answers was not randomly distributed across all verbs. Thus, the decline of double picture choices is unlikely to result from increasing 'experimental competence'. There are two alternative explanations. One explanation could be that the children are becoming more aware of the relevant difference in the two actions, but are not yet sure enough which picture corresponds to the verbal stimulus. Another explanation might lie in the school-like character of nursery schools in Russia. There is a common practice in Russian nursery schools of drilling children to answer questions in a straightforward and unambiguous way. With increasing age children get firmer in their choices, either by pressure for unambiguous answers, or by actual linguistic competence. In the following we will see that this competence does indeed increase with age.

For this purpose, I examine the Uniformity Hypothesis (Hypothesis 2.1). This hypothesis is tested indirectly, namely by testing the Morphology (Hypothesis 2.2a) and Aktionsarten Hypotheses (Hypothesis 2.2b). If either the Morphology (Hypothesis 2.2a) or the Aktionsart Hypothesis (Hypothesis 2.2.b) holds true, the Uniformity Hypothesis can be considered falsified. Thus, in checking these two hypotheses, we can assess four hypotheses at once. First, I will analyze whether the Morphology Hypothesis holds true.

In the experiment, both the relation to the partner and the opacity of the prefix were used as criteria for the morphological classification. Table 6.1 summarizes this classification.

Table 6. 1: Morphological Marking Patterns of Aspect

	Marking Type	Perfective	Imperfective
1.	Prefixes		
	a) prefixes and secondary imperfectivization	<i>na-li-t'</i> 'to pour'	<i>na-l-iv-at'</i> 'to pour'
	b) empty prefixes	<i>na-pis-at'</i> 'to write'	<i>pis-at'</i> 'to write'
	c) prefixes but no secondary imperfectivization	<i>za-plak-at'</i> 'to start crying'	<i>plak-at'</i> 'to cry'
2.	Suffix	<i>pryg-nu-t'</i> 'to jump once'	<i>pryg-at'</i> 'to jump'
3.	Suppletion	<i>vzj-at'</i> 'to take'	<i>br-at'</i> 'to take'

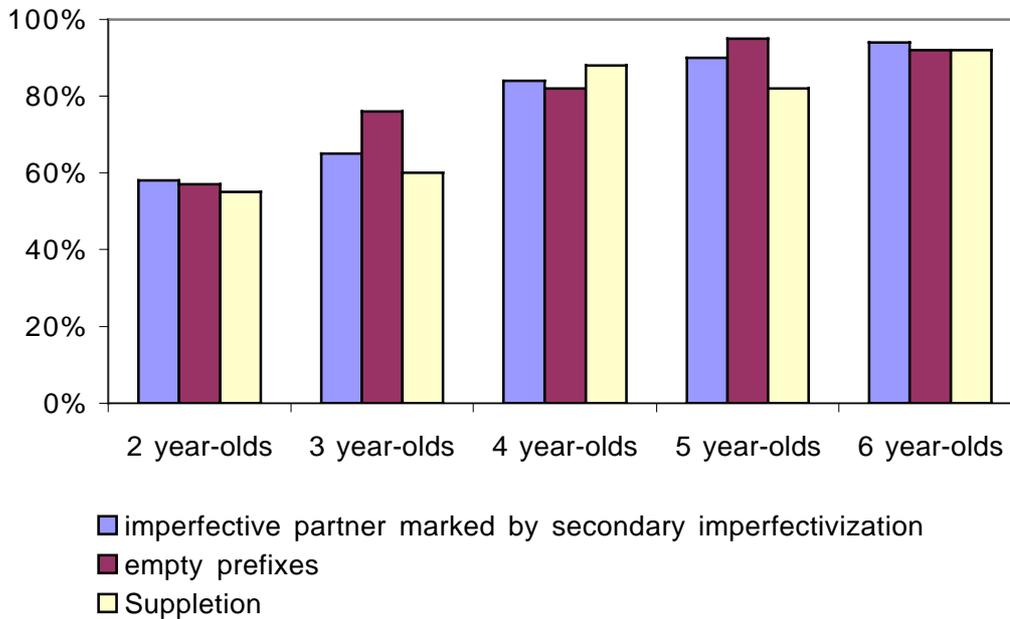
There are three kinds of aspectual markers: prefixes, suffixes and suppletion. Within the prefix group, I distinguish three different kinds of prefixes, based on their degree of opacity and their relation to the imperfective verb. In Slavic linguistics, the first two prefix types are considered to constitute pairs in the sense discussed in Chapter 3: two verbs make up a pair if the meaning of the imperfective and perfective verbs are the same, and the only difference between the two verbs is aspectual. In type 1a, the prefix is meaningful. This is in contrast to the prefixes of type 1b, which are semantically empty, or, at least, non-transparent (cf. above). In prefix type 1c, the lexical meanings of the two verbs differ slightly, but still there are contexts where the difference reduces to aspectual meaning. Traditionally, these verbs are not considered to constitute a pair with the simple verb (cf. Isačenko 1962). Verbs of type 2 and 3 by contrast are again considered to form aspectual pairs.

The task of the child seems to be rather complicated. The verbs of prefix type 1a and 1c and the suffix type could in principle be learned by rules, whereas the verbs of the prefix type 1b and the suppletion group have to be learned by rote. The child has to learn, e.g., whether *brat'* 'take' or *vzjat'* 'take' is the perfective partner of the opposition. The child also has to learn some constraints and combination of rules which are strongly interconnected with the semantics of the prefixes, i.e., their

different degrees of opacity. And finally, the child has to learn that a perfective verb is used when the boundary of an event is highlighted and the imperfective aspect is used when this boundary is not highlighted or not important for the current goal of the communication.

As we saw in Chapter 3, the Russian aspect system is not fully balanced for the two parameters of morphology and Aktionsart. This makes it impossible to blend every marking type with every Aktionsart and to test the variables fully independently. For example, the suffix type (verbs like *pryg-nu-tʹ* 'jump once') is identical with the semelfactive Aktionsart, i.e., verbs with suffixes are automatically also semelfactive. The same is true for prefix type 1c (prefixed verbs which do not have an imperfective partner with secondary imperfectivization, like *za-plak-atʹ* 'start crying' or *po-čit-atʹ* 'read for a while'). This group is congruent with the delimitative and ingressive Aktionsarten. So, if a verb has a prefix and there is no partner with secondary imperfectivization (e.g., there is no imperfective verb **zaplač-iv-atʹ*), it is either ingressive or delimitative in its Aktionsart. There is only one Aktionsart group that includes several morphological markers, and this is the telic Aktionsart which includes verbs like *napisatʹ* 'write up something' (empty prefix) or *nalitʹ* 'pour into something, fill' (prefix and secondary imperfectivization). Thus, in order to test whether morphological markers play a role in the acquisition process, one has to analyze the telic verbs separately, because only in this group is the morphology a variable which is completely independent of Aktionsart. Figure 6.5 shows the results for the different marking patterns of the telic Aktionsart.

Figure 6.5: Mean Percentage of correct responses for the telic Aktionsart with different markings

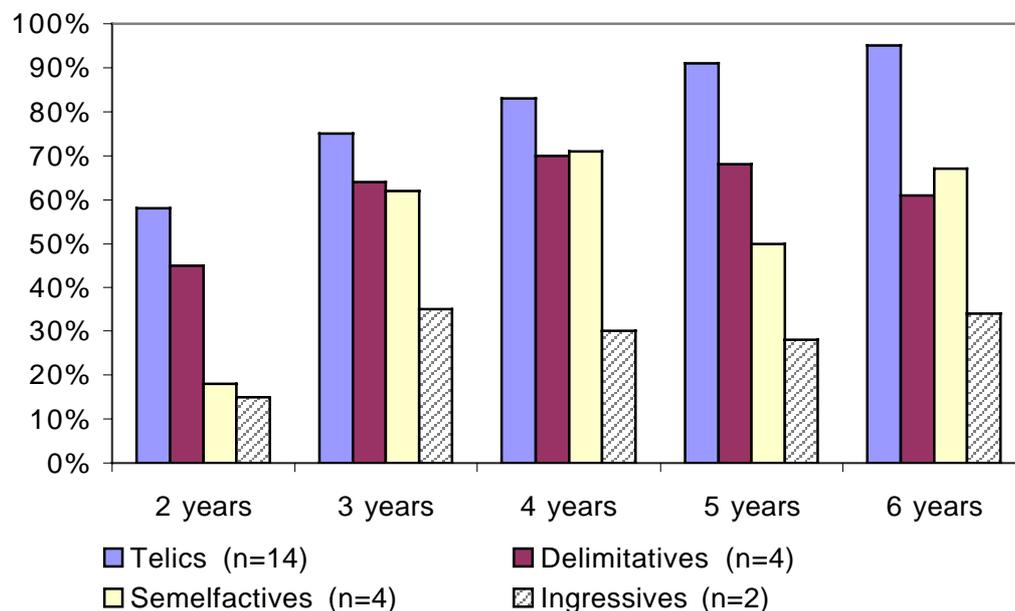


The telic Aktionsart allows for three distinct morphological markers, namely prefix type 1a (verbs where the imperfective partner is derived by secondary imperfectivization, e.g., *perepis-at^{pl}* 'copy' vs. *perepis-yv-at^{pl}* 'copy'), prefix type 1b (verbs with empty prefixes and an imperfective partner which is a simple verb, e.g., *pročit-at^{pl}* 'read' vs. *čit-at^{pl}* 'read'), and suppletion (e.g. *vzj-at^{pl}* 'take' vs. *br-at^{pl}* 'take'). If morphology were a decisive factor, the responses of the children should vary for the different morphological groups. To test this, I used chi-square test (cf. Introduction). The results of the chi-square test for the different age groups indicate that at least for the 2 to 5-year-olds morphology is not a significant variable (d.f.=2, $\chi^2 \leq 5.47$, $p > .05$). This means that except for the 6-year-olds (d.f.=2, $\chi^2 = 8.75$, $p = .013$), morphology does not seem to play a role in the choice of the children's answers. Also, the 5-year-olds (d.f.=2, $\chi^2 = 5.47$, $p = .05$) seem to take morphology into account somewhat more than the younger children (2-year-olds $\chi^2 = .13$; 3-year-olds $\chi^2 = 4.69$; 4-year-olds $\chi^2 = .68$). However, morphology is still not a significant factor in contrast to the 6-year-olds.

These results suggest that it is not the morphology of the verb, but rather the Aktionsart that is the important factor in the choice of an answer. The same results were obtained by Weist (1983), who investigated different morphological markers of telic verbs in Polish. Weist did not find any difference in the understanding of verbs according to their marking with suffixes or prefixes. There was no difference in the results depending on the morphological marker of different verbs, i.e., it made no difference for the children whether aspect was marked by a suffix or a by a prefix.

If we subsume the three types of morphological marking under one heading, i.e., telic Aktionsart, and evaluate this group against the other Aktionsarten, we discover that Aktionsart is the really important factor for the development of the understanding of aspectual forms. Let us now examine the distribution of mean correct answers for the different Aktionsarten groups (Figure 6.6).¹

Figure 6.6: Mean percentage of correct answers for the different Aktionsarten



To check whether there is an interdependence between the answers and the Aktionsart of the verb, I calculated the chi-square for each age group. Aktionsarten seem to be

¹ The distribution of the Aktionsarten is not equal due to the already mentioned fact that Aktionsart and marking type are not completely balanced in the Russian aspect system.

relevant for all age groups. For the 2 to 5-year-olds the results are very clear (d.f.= 3, 2-year-olds $\chi^2 = 57.53$, 3-year-olds $\chi^2 = 26.47$, 4-year-olds $\chi^2 = 17.61$, 5 year-olds $\chi^2 = 116.08$; $p < .01$ for all age groups).

Although Aktionsarten are still significant for the the 6-year-olds, the picture looks slightly different (d.f.=3, $\chi^2=218.49$, $p<.01$). The value for the chi-square is much higher for the 6-year-olds than for the children of the other age groups. One could argue that the 6-year-olds change their strategy; that is morphology seems to become more independent of Aktionsart. Morphology and Aktionsart were strongly interconnected for the younger children, but for the older children this interrelation seems to get looser and morphology seems to gain more importance.

Independent confirmation of the relevance of Aktionsarten comes from analyzing correlations between types of wrong answers with Aktionsarten. For the 2-year-olds, the kind of wrong answer is dependent on Aktionsart. The results are summarized in Table 6.2.

Table 6.2. Mean percentage of two types of wrong answers in the 2-year-olds categorized by Aktionsarten

	Telics	Delimitatives	Ingressives	Semelfactives
Wrong picture	46	33	62	62
Both pictures	54	67	38	38

A chi-square analysis shows that there is a significant relationship between Aktionsarten and the type of wrong answer (d.f.=3, $\chi^2=10.3$, $p<.05$). This fact shows that the youngest children do not randomly select both pictures, but rather that the Aktionsarten are relevant for their decision. I also tested whether morphology plays a role in the distribution of wrong answers, but there was no significant trend (d.f.=4, $\chi^2=2.19$, $p > .1$).

A clear picture of development can be observed in the telic group, where the behavior of the 2-year-olds is random, with a continuous development up to a mean of 95% of correct answers of the 6-year-olds. The performance of the 4-year-olds is especially interesting for the delimitatives and semelfactives. The mean percentage of

correct answers is higher than in the 5- and 6-year-olds. From the picture we get from Figure 6.7, it seems to be clear that the telic Aktionsarten group is the only group for which we can find a clear-cut development across age. In no other Aktionsarten group does there seem to be a correlation with age. To test, whether this indeed holds true, I used the Spearman correlation coefficient to compare the results with the analysis of the grouped data. The results for the semelfactive group show us why a correlation analysis can sometimes deliver very useful information which we would have missed, had we relied exclusively on the grouped data analysis. There is a correlation between age and the sum of correct answers for the semelfactive Aktionsart as well ($r=.3767$, $p=.000$). But the correlation is not as strong as the correlation of the telic group with age ($r=.6855$, $p=.000$). For the other two quantitative Aktionsarten there is no significant correlation with age.

An especially intriguing result is the treatment of ingressives, i.e., of verbs which denote the beginning of an action, e.g. *zaplakat*⁹ 'start to cry'. This Aktionsart was especially difficult for children of all ages. All age groups preferred the picture where the puppet did the action for the whole time rather than the picture where she or he started to do something, e.g., started to cry. The children did not choose randomly one of the two pictures but significantly more often preferred the wrong scene, namely where only the action was depicted without showing the beginning of the action. This also confirms that the children understood the task correctly and did not choose the pictures at random.

5. Conclusions

The findings reported in this chapter suggest that one important parameter of lexical semantics, *viz.* Aktionsarten, does indeed play a major role in the acquisition of Russian aspect. The question about primitiveness of Russian aspect can be answered as follows. It has been clearly shown that the grammatical category is not primitive in any of the senses mentioned in the introduction, i.e., it can neither be

innate nor developed in a single step. Rather, there is a continuous development in the understanding of aspectual forms.

While aspect is demonstrably not a primitive category of child Russian, the question as to whether Aktionsarten are primitive cannot be answered so clearly. The telic Aktionsart is best understood by children from all age groups, but still not all telic verbs are understood from the very beginning. Thus one can rather talk about a tendency and speculate whether telic verbs might have a bootstrapping effect, for the acquisition of aspect, i.e., they ease the way into the acquisition of other Aktionsarten. In his study of the acquisition of Chinese aspect, Li (1989) found essentially the same: children start out by learning aspect with telic Aktionsarten before mastering aspect with other Aktionsarten. Therefore, it could be that there is some universal property of the telic Aktionsart which makes it especially accessible for children. This would fit the picture that we get from the literature, where researchers tend to assume that it is precisely the telic Aktionsart that is especially easy to learn in general. It also fits the classic finding that past tense is used first for telic Aktionsarten, and later only for other Aktionsarten (cf., for instance, Bronckart and Sinclair 1973 on the acquisition of French tense, and Antinucci and Miller 1976 on the acquisition of Italian tense).

What makes telic predicates more accessible? Two explanations suggest themselves: Either there is something like an innate predisposition for telicity or there is an input-based or pragmatic reason. The basic problem with claims about innateness is that they can only be the last option. As long as we are committed to the principle that unobservable entities should be hypothesized only if everything else fails, the innateness assumption can be supported only by falsifying alternative explanations. Thus, one has to check first whether there might not be another explanation that has empirical support, before assuming innateness.

In Russian, one such explanation relies on an additional, language-specific feature, possibly given in the input to the child: telic predicates are the only verbs for which there is a clear-cut opposition of a perfective and an imperfective form. Only for telics do the perfective and imperfective forms have exactly the same lexical

structure. For instance, both *nalit^p sok v stakan* 'fill juice in glass' and *nalivatⁱ sok v stakan* 'fill juice in glass' refer to the same end-bounded, telic process of filling up a glass. Thus we have one single lexeme with two grammatical forms. This is manifested in a single morphological device, namely secondary imperfectivization (here marked by the suffix-*yv*). In contrast to this, in all other Aktionsarten there is not such a narrow relationship between an imperfective and a perfective verb. The perfective forms differ from the imperfective not only with regard to aspect, but they also include a boundary notion which is not present in the imperfective form. For instance, *za-plak-at^p* 'start crying' includes the notion of ingressivity, which is not present in the base verb *plakatⁱ* 'cry'. It is, in fact, a long-standing controversy in Slavic linguistics whether forms like *zaplakat^p* and *plakatⁱ* should be seen as single lexemes or whether we should not rather talk about two distinct, though related, monoaspectual forms (see Chapter 5 for discussion). Thus telic predicates have a special status in the organization of Russian aspect. This may help to make them more accessible for children. While this might provide a plausible explanation for the special behavior of telics in the acquisition process, it relies heavily on language-specific facts. This is in obvious conflict with the observation that telic verbs have an outstanding accessibility for children in other languages as well. Moreover, it is not clear at all in what way children may have access to these structural facts on the basis of the input they receive.

However, there is yet another alternative to the innateness assumption, namely a pragmatic explanation. There are basically two types of Aktionsarten that are adequate in an isolated context, telics and semelfactives. Concerning telics, one can assume that it is far more interesting and worth reporting an event in isolation, i.e., without narrative elaboration, if there is a qualitative change of state, e.g., the breaking of a window, or a result, e.g., when reading completely through a book, than if there is only a temporal change of state, e.g., the inception of an activity like playing. The qualitative change of state can be reported in isolation as exemplified in (1), but the temporal change of state is typically seen in relation to some other action or event (2).

- (1) *Sprosil Fedja traktorista. – Normal'no živut, - skazal traktorist i uexal dal'se.*
 'Fedja asked the tractor driver – they live allright – said the tractor driver and drove further.'
 (Uppsala Corpus: Belov, V. *Rasskazy o vjakoj živnosti*, in: "Dialog", Petrozavodsk, 1982, 149-166)
- (2) *Elena Arkad'evna byla potrjasena – nikogda v žizni Dar ne pozvoljal sebe ničego podobnogo. Ne razdevajas', ona sela na krovat' i zaplakala.*
 'Elena Arkad'evna was shocked – never ever has Dar done anything similar. Without undressing herself she sat down on the bed and started to cry.'
 (Uppsala corpus: Abramov, F. *Potomok Džima*, in: 'Dela Rossijskie', Moscow, 1987, 520-525).

The telic verb *uexal* 'he drove away' in (1) is without relation to the preceding actions. It further does not need to have any relation with the following events. This is different with the ingressive verb *zaplakala* 'started crying' in (2). The preceding sentences are clearly connected with the verb, i.e. they give the reason why Elena Arkad'evna started to cry.

Another adequate Aktionsart for the description of an isolated event is semelfactives, which describe a single punctual action. Now, it is precisely telic and semelfactive Aktionsarten for which we see a development across age. Thus, it might just be that, in isolation, telic and semelfactive verbs are more salient for children than ingressives and delimitatives which imply only a temporal change without a qualitative result. If this is true, ingressives and delimitatives should be more salient in other contexts, e.g., in the concatenation of events in a narrative.

As shown for narratives in other languages, there is a correlation in children's use of the present imperfective or progressive with atelic (durative) verbs, i.e., activity and state verbs (Berman and Slobin 1994). In contrast, telic verbs are preferably put into a perfective past form. Children use these forms to foreground and push the narrative forward. Since the perfective aspect is especially important to advance the plot, it is more relevant to the child to learn and apply this form in narratives. Outside of narratives there is no real reason why the child should focus on the initial boundary of the event instead of on the action itself. Hence it might be that children understand

these forms in the context of narration, but they do not yet detach the forms from this context. This could be the reason why the aspectual marking of ingressives and delimitatives shows up only at a relatively late age in the experiment discussed above. These Aktionsarten might be simply odd in a setting where isolated events are subject to aspectual choice. This hypothesis is tested in Chapter 10 in which the telic and ingressive Aktionsarten are compared on different levels of textual complexity.

We have seen now that the comprehension of perfective verbs depends on their Aktionsart. In Chapter 7, I examine what Aktionsarten children use when describing the same scenes used in this comprehension experiment.

Chapter 7: Description of Isolated Events (Level 1)

1. Introduction

In the preceding chapter we learned that Aktionsarten are relevant for the comprehension of aspectual forms. One of the major findings was that the telic Aktionsart is a key factor in the comprehension process. Further, this Aktionsart was mainly responsible for the developmental curve we found in the comprehension data. Thus, according to the comprehension data, aspect is not an innate category or a category that is available from the very beginning of language acquisition. Instead, aspect is a category that children acquire during a long process, a process that is not even completed by age 6.

These findings are thus in stark contrast to the early claims in Russian language acquisition research that aspect is fully developed from very early on (Gvozdev 1961). A similar claim has been made by Weist, *et al.* (1984) in more recent research studying the acquisition of Polish. As discussed in Chapter 6, Weist, *et al.* (1984: 369) claimed that the dichotomy of perfective and imperfective aspect is "primitive" in child Polish. The Polish aspect system is very similar to the Russian one, thus these claims are of interest for the present study. Like the Russian aspect system, the Polish system consists of a binary opposition of perfective and imperfective verbs. The general semantics as outlined for Russian in Chapter 1 are the same for Polish, i.e., the perfective aspect highlights a boundary, whereas the imperfective is the unmarked member of the opposition. The types of morphological markers for the two aspects are similar as well. Though there are some differences, they are subtle matters of usage. Otherwise the Russian and Polish aspect systems are very similar.

The main argument adduced by Gvozdev and Weist and colleagues was the absence of errors. Gvozdev's claims were based on longitudinal production data only.

As already mentioned in the Introduction, it is difficult to understand Gvozdev's interpretation of his diary data. If we are interested in more than formal errors, we need to know the context in which an aspectual form is embedded. Such an analysis is impossible with Gvozdev's diary which lacks both the utterances of the interlocutor and the broader context. Weist, *et al.* (1984), in their study of Polish aspect used both comprehension and production data from experimental and natural settings. Like Gvozdev, they found that children do not make errors. The absence of errors, however, is not necessarily an indicator that the child has acquired a category (cf. Introduction). We need to know not only about errors of commission, but also about errors of omission. But in order to speak about errors of omission, it is crucial to provide contexts in which these forms could occur and in fact typically do occur. To warrant a claim about the absence of errors, we would need a fine-grained analysis of the semantics of the forms and the contexts in which they are used and understood, and we would need to take into account the pragmatics of children's aspect usage. Another argument Weist, *et al.* (1984) adduced in favor of early aspect competence is the presence of perfective and imperfective verb forms from the very beginning of language acquisition. However, this fact can support the hypothesis of early competence only if one can give a clear distributional analysis of verb forms showing that the two different aspectual forms occur independently of the Aktionsart of the verb, independently of tense, and independently of any other semantic category. It is exactly gaps in this that Chapter 6 revealed in young children's competence. We have seen that children up to at least age 6 have great difficulties in understanding some Aktionsarten in isolation. These findings clearly show that aspect cannot be fully acquired right from the beginning even though we do not find any clear errors of commission.

In short, the comprehension data presented in Chapter 6 have falsified *The Primitive Category Hypothesis*, according to which aspect is fully mastered from the very beginning of language acquisition because it is either innate or developed in one single step (on the basis of the input, or general pragmatic competence, or

prelinguistic abilities, etc.). Thus, the comprehension data lead us to come to a different conclusion about the acquisition of Russian aspect than Gvozdev.

In this chapter, I want to approach *The Primitive Category Hypothesis* from the viewpoint of production, assessed by means of an experiment aimed at isolated utterances as in the comprehension experiment. The question arises whether we would come to the same conclusion as Gvozdev if we concentrated exclusively on production data. In this chapter we will find confirming Gvozdev's claim, and contradicting the results of Chapter 6. This shows that it is vital to combine evidence from comprehension and production experiments instead of relying on only one method. The apparent contradiction of the results will be one of the major themes that I develop throughout the remainder of this dissertation.

Another main question of aspect research is the role of Aktionsarten in the acquisition process. In the previous chapter we have seen that in Russian Aktionsarten play an important role in the understanding of aspectual forms. These results are very similar to what has been found for different languages. Aspect studies on a wide array of languages have found a correlation between the perfective aspect and the telic Aktionsart and the imperfective aspect in the durative Aktionsarten (Bloom, *et al.* 1980, Harner 1981, Clark 1996 on English, Li 1989, Bronckart and Sinclair 1973 on French, Antinucci and Miller 1976 on Italian, Aksu 1978, Aksu-Koç 1988 on Turkish, Stephany 1985 on Greek, Li 1989, Li and Shirai 2000 on Chinese, Shirai 1991, Shirai and Andersen 1995 on Japanese). The question we want to test in this chapter is whether this correlation applies to production data of Russian as well.

The chapter is structured as follows: First, I describe the design and the procedure of the experiment. Second, before I discuss the qualitative differences between the production experiment and the comprehension experiment presented in Chapter 6, and show what these differences imply for an interpretation of the results. Third, I discuss the results of the experiments and compare them with the results of the comprehension experiment and the results of aspect studies in other languages. Fourth, I offer some conclusions.

2. Design of the experiment and procedure

The general goal of the experiment is to establish what aspectual forms and Aktionsarten children of different age groups use in describing isolated scenes. To assess this, I used a subset of the same stimuli that I designed for the comprehension experiment. The advantage of using the same stimuli in both experiments is that the events shown to the children have the same complexity. Further, if the stimuli were not identical (even if the level of discourse complexity was), we could not be sure that the type of stimuli does not constitute a variable that influences the results.

The experiment took the following form. Every child was shown 28 short scenes.¹ Unlike the comprehension experiment, however, every scene was shown separately, i.e., not in the split-screen format used in the comprehension experiment. The children were presented with the following types of scenes.

1. scenes without an intrinsic end result. (13/30 =50%)
 - 1a. pure actions (e.g., crying) (10/30 =33%)
 - 1b. actions for which an end result could, but not need not, be anticipated (e.g., writing a letter, without showing the end of the activity) (5/30=17%)
2. scenes with a clear end result (e.g., writing a letter and finishing it) (9/30=30%)
3. scenes showing the beginning of an action (e.g., starting to laugh without showing the end of the activity) (2/20=7%)
4. scenes in which nothing happened at first, then an action took place for a short time and then stopped again (e.g., reading for a while) (2/30=7%)
5. scenes depicting punctual actions (e.g., jumping once) 92/30=7%)

¹ The number of films shown varied between 24 and 30. This was due to various reasons, such as the mood of the child or the unwillingness of the child to describe the last scenes in a session. The mean and the median of scenes described by the children was 28.

I expected that the scenes would trigger certain verbs with specific Aktionsarten. If children indeed followed these expectations, we would get a 50/50 distribution of the perfective and imperfective aspect. We would expect that children use the imperfective aspect for Group 1 and the perfective aspect for all other groups. However, similar to Li's (1989) study of Mandarin aspect, I am only concerned here with the interrelation of Aktionsart and aspect, and not with the interrelation of the perception of extralinguistic events and their linguistic realizations. Thus, the coding was done on the basis of the verb forms used by the children.

Due to the fact that the comprehension experiment tested two factors against each other, namely Aktionsarten and morphological make-up of verbs, the number of verbs in each Aktionsart category was unequal. Morphological marking could only be tested within the telic group. This resulted in an inflation of the number of items in the telic group relative to the other Aktionsart categories. The unequal size of the groups has to be taken into account in the evaluation of the results. However, the total number of verbs in one or the other Aktionsarten category is not an issue in the analysis of the production task, because I did not compare the percentages of the individual Aktionsarten within age-groups. What I was interested in is whether there is a difference in behavior within Aktionsarten across age.

In all, 39 children (age 3-6) took part in the experiment (9 children in age group 3, 10 children in age group 4, 11 children in age group 5, and 9 children in age group 6). The children were recruited from several different kindergartens in the center of St. Petersburg. No child took part in both the comprehension and the production experiment, so as to ensure that the two experiments did not influence each other. Such an influence could have easily occurred if, for instance, a child participated in the comprehension experiment first. She might then have remembered some forms that served as prompts in the comprehension experiment and used them herself in the production experiment with the respective scenes. Even though this is an unlikely scenario, it is best to exclude such a possibility altogether. If the child were presented with the production experiment first, she might remember some scenes better than others and identify them in the comprehension experiment for that reason, and not

because she thinks that they answer the prompt best. These possible biases were excluded by having non-overlapping samples. The disadvantage of having different children in the two experiments is that we cannot directly compare the results of the comprehension and production experiment.

As was the case in the comprehension task, children of different nursery schools of St. Petersburg were chosen. There was no correlation between specific nursery schools and the socioeconomic or educational background of the children's parents. Each child was tested individually in a separate room of the nursery school. The test was conducted by the same experimenters as the comprehension experiment. One experimenter, a native speaker of Russian, was responsible for interaction with the child during the experiment. She was not familiar with the precise research questions. The other experimenter took care of the technical procedures. The experiment was divided in at least two sessions for each child and up to four sessions for the younger children. As in the comprehension experiment, the sessions took place on different days. The children's responses were noted down during the experiment by the experimenter who was responsible for the screening of the films. Further, the data were audiotaped and later transcribed by a native speaker of Russian who was not familiar with the goals of the experiment. These transcripts provided a check of the results noted down during the experiment.

The experimenter responsible for the interaction with the children was provided with a written copy of the instructions for the child which were simple enough to be understood by 3-year-olds. She read the instructions slowly to the child and then asked whether s/he understood the task; if necessary the experimenter repeated the instructions. In the instructions, first the two protagonists (Maša and Toša) were introduced. Then the child was told that several short films would be shown in which the protagonists would take part.

After each film, the child was asked to tell what had happened in the film to a toy lion (handpuppet) who wanted to know the story, but could not see very well, so the child should help him out and tell him the story. The child was made familiar with the lion before the experiment started. The toy lion proved to be less intimidating than an

adult listener, and the children were very motivated to tell what happened to the lion. Every child was given the same three sample scenes to become familiar with the procedure. These scenes were not included in the analysis. Unlike the comprehension experiment, in which the question was asked with a frozen picture of the last scene on the screen, in the production experiment the screen turned dark after the scene was finished. The question asked was: *Čto tam slučilos^p* 'what happened there?' or as a second prompt, if the child did not react, the experimenter repeated the question. If no answer was obtained she asked further *Čto s nim/nej* 'What is with him/her?'. This last question did not have a verb at all. Another alternative, if no reaction was obtained, was the question *Čto tam byloⁱ* 'what was/happened there?'. The last prompt was very rarely used; in most cases the first question was sufficient. The problem with both of the prompts which include a verb is that the verbs are either perfective or imperfective, but mostly perfective, since the prompt *Čto tam slučilos^p* was mostly used. Thus, in principle these prompts might trigger a response from the child in the same aspect. This, however, is a problem with any possible prompt using a verb, since in Russian every verb is either perfective or imperfective. Thus, in principle, it is not possible to control for the possibility that the perfective or imperfective verb form in the question might trigger a perfective or imperfective verb form in the response. I tried to choose a verb form for the question which does not semantically predetermine the aspect used in the subsequent description by the child, i.e., I chose the question such that both aspects would be appropriate in the answers of the child. In fact, it turned out that children did not restrict their answers to perfective or imperfective aspect depending on the prompt but gave descriptions in both imperfective and perfective aspect, independent of the prompt. Thus, we can exclude the possibility that the children chose aspect in automatic response to the prompt.

To ensure that the order in which the scenes were presented did not influence the answers of the children, I randomized the order of scenes before showing them. Every scene was copied onto a separate video cassette and the order of presentation was different for every child.

3. Qualitative differences between Level 1 comprehension and production data

Both experiments – comprehension and production – aim at investigating aspectual forms in isolated utterances. The question arises whether the results of these two experiments are comparable and, if so, in what way and to what extent. Comparability here means that we can assess whether the comprehension of specific linguistic forms correlates with the way children choose to describe the same scenes.

As stated above, a direct comparison between the behavior of the children in the comprehension and in the production experiment is not possible, because the children taking part in the two experiments were not the same. However, there are a number of additional reasons that render a direct comparison of the comprehension and production experiments impossible. These reasons all go back to a general qualitative difference between the two experiments. Since this is of crucial importance for the present study, and in order to be able to put the results into a broader context, I discuss this issue before actually presenting the results of the production experiment.

First, the comprehension experiment tests the competence of a child, i.e., whether or not s/he is capable of understanding the meaning of a specific form. If the meaning of a form is acquired, the child has to understand the form in all possible contexts, i.e., also in an isolated utterance such as in the comprehension experiment, deprived of other linguistic context, even if this might be an atypical context for this form. In the comprehension experiment, children were presented with specific questions to which they either knew the answers or did not know them, i.e., the answers could be categorized as either right or wrong. These questions were not only deprived of any linguistic context (except for the instructions), but also of any larger event context, i.e., the scenes were not embedded in a larger theme or sequence of events. The prompts consisted of specific verb forms for which Aktionsart and morphological marking were controlled for, and each child was presented with the same number of verb forms. Thus, the results of the children of different ages could be compared

directly. Due to the experimental design, I could exclude the possibility that other variables – specifically, the broader linguistic or nonlinguistic context – might help the child answer the question even without understanding the verb form itself. As a result, it was possible to filter out the variable that plays the most relevant role in the development of understanding of different aspectual forms, and this variable turned out to be *Aktionsart*.

The production experiment, in contrast, can only show the preferences for one or the other form that a child has in the specific context of the experiment. Children were shown a short video clip with one action happening. They were free to describe that scene as they pleased. I could only control for the verb chosen by the child to a limited extent. This was done by the scene played in the video. Still, the exact interpretation of the scene, and hence the choice of verb, could not be predetermined, because it was up to the child to choose which verb s/he wanted to use. This means that not all children use the same verbs, and thus the experimental setting is not as strict as in the comprehension experiment. Example (1) and (2) show two descriptions of the same scene by two different children.

- (1) *Toša konfekti sobiralⁱ*. (Fedja 4;6)
'Toša gathered candies'.

 (2) *Konfetki k sebe podbiral^ai vse*. (Fedja, 4;9)
'She picked up all the candy to herself'.

It is impossible to know why a child uses a specific verb rather than another to describe a scene, i.e., we do not know whether it is a matter of choice or inability to use another verb form. Thus, such an experiment can never test the linguistic competence of a child. This means that we are restricted to talk about preferences of the child within the specific context of this experiment.

Second, even though the experiment aimed at isolated utterances, a child could choose to describe a scene with a single utterance or the child could be more elaborate and use a sequence of utterances, i.e., the child could be more explicit in describing

the scene or create his or her own context for that scene. The following two examples show descriptions of the same scene varying in complexity and explicitness.

- (3) *Ona položila^p bel'je. Podsypala^p porošku i stala^p stira^ti.* (Nataša, 5;10)
'She put the linen. She poured some detergent and started to wash'.
- (4) *Maša stiraⁱ bel'je.* (Artjom, 5;8)
'Maša washed the linen'.

We cannot know the reason why, as here, Nataša chose to describe this specific scene with two utterances, while Artjom was very brief in his description, using a single utterance only. The reasons might include the child's personality, the mood the child was in during the experiment, whether s/he enjoyed taking part in the experiment or not, whether s/he wanted to go back to her friends to continue playing, etc. These are all factors that might be relevant for the choice of a brief vs. an elaborate description.

Still, the choice between single isolated vs. complex elaborated utterances by itself has important consequences for the choice of aspect, because, as we will see, aspectual choice in an isolated utterance depends on other factors than in concatenated utterances. In a single utterance the child is probably more likely to use the imperfective aspect to describe a fact than in a concatenation of events: as argued in Chapters 4 and 6, isolation favors the statement-of-fact function associated with the imperfective, whereas sequential concatenation biases aspectual use towards perfectives. This is a factor that has to be considered in the evaluation of such an experiment. Further, the analysis has to include and take care of differences in the number of verbs used by different children.

Third, we cannot expect that children will show the same developmental curve in the production data as in the comprehension experiment. All children described the scenes presented in the experiment. As shown by the comprehension experiment, telics are the verbs children know best. We can expect that children of all age groups will use those verbs that they know best. Thus, we cannot expect the same curve for telics as we found in the comprehension experiment. We would rather expect that they use telics from early on without any development.

Fourth, in the comprehension experiment duratives were excluded because only perfective verbs were tested. However, duratives are general-semantically and morphologically unmarked (cf. Chapter 5). We thus can expect that they are easy for children, and children will use them from early on in the production experiment.

Thus, in summary, in a production experiment such as the one conducted here we cannot control for as many variables as in the comprehension experiment dealing with the same level of discourse complexity, even if the same stimuli are used. This limits the interpretability of the production data and a direct comparison with the comprehension data.

These problems are not only relevant for this study, but they are of general relevance for comparing data gathered under different circumstances. It is important to take such factors into account when drawing conclusions and making generalizations from data not only gained from different languages, but also situated in different contexts.

4. Hypotheses

If we concentrate on Aktionsarten for the moment, without taking aspect into account, there are several expectations. As shown in Chapter 5, durative (simplex) verbs and perfective telic verbs are the most unmarked verbs in the system of Russian aspect. A frequency count of aspect usage in literary text (cf. Chapter 3) has shown that these verbs are indeed the most frequent verbs used in literary texts. We thus can hypothesize that this distribution bears out for production data of this chapter as well.

Hypothesis 1:

Duratives and telics are the most frequent Aktionsarten used by the children.

As already stated above, it is unreasonable to assume that in this production experiment we will obtain the same developmental curve for telics as in the comprehension

experiment. Such a curve would mean that the older the children are the more telics they use, and eventually adults would use telics almost exclusively. As argued above, a developmental curve as the one found in the comprehension experiment would be very unexpected in this production experiment. It would rather be more reasonable to expect that telics decrease in favor of the other less accessible Aktionsarten, because one could expect that the older the children develop a wider repertoire of Aktionsarten.

We still would not expect to find too many of these other Aktionsarten (semelfactives, delimitatives or ingressive) in the descriptions of these scenes. I hypothesized at the end of Chapter 6 that at least the ingressive Aktionsart needs to be embedded in an extended context to make sense. In isolation, an ingressive such as *On zaplaka^P* 'he started to cry' in response to the question *Čto tam slučilos^P* 'what happened there?' does not make much sense. For such an ingressive to make sense, we would need at least a preceding or a following utterance such as *On upa^P i zaplaka^P* 'he fell down and started to cry', or *On zaplaka^P, potomu što ...* 'he started to cry because ...' etc. These examples show that it is a specific context that ingressives ask for, i.e. a context in which modality/causality/contingency is discussed. Since the production experiment did not provide such a context we would not expect very many ingressives, not even for the scenes which actually depict the beginning of an action. Taking these factors into account, if there was a developmental curve at all, I would expect it to be in the atelic change-of-situation Aktionsarten (semelfactives, delimitatives) and not in the telic or ingressive Aktionsart. This is summarized in Hypothesis 2:

Hypothesis 2:

There is no development over age for the telic Aktionsart in contrast to the atelic change-of-situation Aktionsarten (i.e., delimitatives and semelfactives), which are expected to increase somewhat in frequency with age. The atelic change-of-situation Aktionsarten, however, are much less frequent than the durative and telic Aktionsarten over all ages.

With regard to aspect, I expect the following distribution of aspectual.

Hypothesis 3:

There is an even distribution of perfective and imperfective verbs.

Another important issue is potential correlations between aspect and Aktionsarten. In a wide array of languages it has been found that there is a correlation between the acquisition of the perfective aspect and the telic Aktionsart, and the imperfective aspect and the atelic Aktionsarten (duratives in my terminology), respectively. To test this hypothesis for Russian, we have to focus on the telic Aktionsart, because the other Aktionsarten correlate with only one aspect, and there is thus no choice of aspect. Based on the aspect/Aktionsart correlation found in other languages, I propose the following hypothesis:

Hypothesis 4:

There is a correlation of the telic Aktionsart and the use of the perfective aspect. This tendency is stronger for younger children than for older children.

5. Results and Discussion

5.1 Distribution of Aktionsarten over age

In the comprehension experiment we saw that Aktionsarten are a relevant factor for the understanding of Russian aspect, and specifically for the understanding of perfective forms. We have learned that a very early and prominent role is played by verbs with the telic Aktionsart, whereas children of all ages had more difficulties with the other Aktionsarten. These results correspond to the results from many other languages, in which telic verbs proved to be important in comprehension as well as production.

Now we need to find out how the different Aktionsarten distribute over the different age groups in the production experiment.

As a first step, I analyzed whether there is a difference in the choice of Aktionsart in the different age groups. Table 7.1 illustrates how the Aktionsarten distribute over age groups.

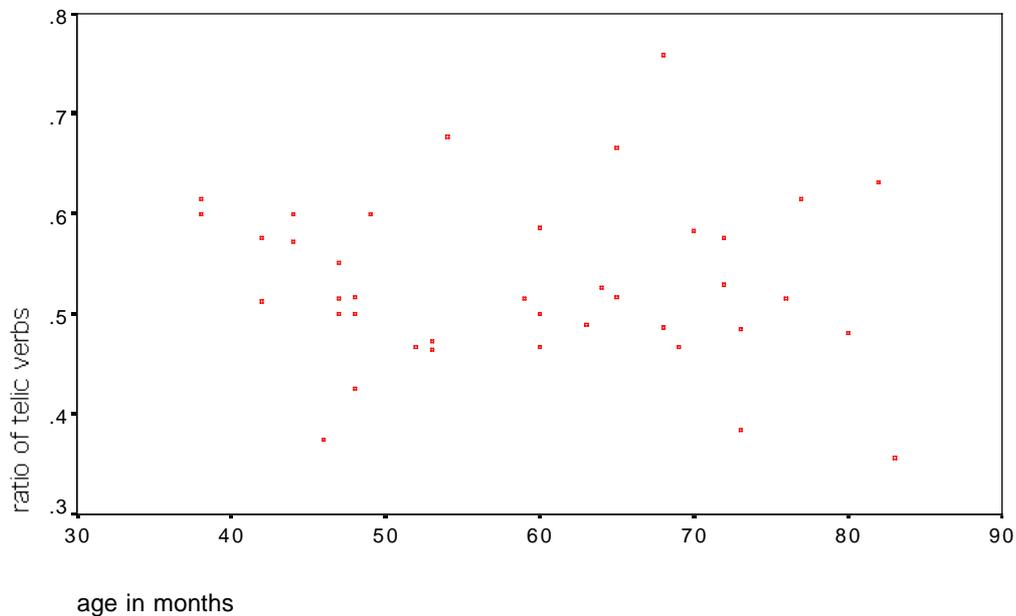
Table 7.1: Mean percentage of Aktionsarten used in the production experiment

Age	Telics	Duratives	Ingressives	Delimitatives	Semelfactives
3-year-olds n=9	40 %	57%	1%	2%	1%
4-year-olds n=10	42 %	54%	2%	1%	.5%
5-year-olds n=11	44 %	51%	3%	2%	1%
6-year-olds n=9	44%	46 %	4%	5% ¹	1%

As proposed in Hypothesis 1, the telic and the durative Aktionsarten are the most frequent Aktionsarten across age groups. There is, however, considerable variation in the behavior within age groups. To exemplify this variation, it is worthwhile to look at the distribution of the telic Aktionsart over age (Figure 7.1).

¹ The high percentage of ingressives in the 6-year-olds is entirely due to one child who used predominantly the prefix *po-* with many verbs. It is however, not clear whether the prefix was used to indicate ingressivity or rather purely perfectivity which is the standard meaning for this prefix.

Figure 7.1. The use of the telic Aktionsart over age



As becomes clear from the figure, there is no development visible over age and there is variation throughout all ages. The Spearman correlation coefficient confirms this: there is no significant correlation between the proportion of telics and age ($r=.2335$, $p=.076$). This is what I expected, since the telic Aktionsart was the easiest Aktionsart for children of all ages. Thus, Hypothesis 2 has been confirmed for the telic Aktionsarten. If we expected a correlation at all, it should be negative, i.e., the older the children the fewer telic Aktionsarten they use, in favor of the contextually more restricted Aktionsarten (cf. Hypothesis 2 above).

The question arises whether any other Aktionsart correlates with age. It turns out that, in contradiction to Hypothesis 2, there is no significant correlation with age for any of the other Aktionsarten (duratives: $r=-.2328$, $p=.077$, semelfactives: $r=-.0478$, $p=.386$, delimitatives: $r=.1092$, $p=.254$, ingressives: $r=.2317$, $p=.078$). Thus, with respect to Aktionsart choice there seems to be no development across age whatsoever. Further, it is interesting to note that even though children have a choice to describe the scenes in various ways, there is a relatively great consistency not only in the

Aktionsarten used by the children but also in the individual verbs themselves chosen for these descriptions.

On first sight, it is a rather peculiar finding that all children seem to behave the same in their choice of Aktionsart. What does this mean and how could it be explained?

Before I try to answer this question, it is important to give some background information about the overall distribution of the different Aktionsarten. The predominant Aktionsarten used by children in this task were telics (5) and duratives (6), with duratives being the strongest group.

(5) *Anton s''eP konfetki.* (Ira, 3;6)
'Anton ate the candy.'

(6) *Maša maxalaⁱ rukoj.* (Igor', 4;0)
'Maša waved with her hand!'

On average, 43% of the verbs were telics, 52% duratives, and the rest divided between the other Aktionsarten: ingressives as in (7), semelfactives as in (8), and delimitatives as in (9).

(7) *To posmotrela^p v zerkalo i zasmejalaⁿ nad soboj.* (Timoša, 6;5)
'There she looked in the mirror and started to laugh about herself.'

(8) *Eto Toša potom stuknu^P.* (Zenja, 4;0)
'Then Toša knocked.'

(9) *Maša počitala^P knigu.* (Ksjuša, 5;10)
'Maša read a book for a while.'

The three atelic change-of-situation Aktionsarten – ingressives, delimitatives, and semelfactives – played only a very minor role (5% of the total).

It is possible that this is in part simply due to the experimental setup, as mentioned above. The bias toward the telic Aktionsart partly comes from the research question of the comprehension experiment. The two parameters that were tested in the comprehension experiment were Aktionsart and morphology. Without confounding

morphology with Aktionsart, we can test for morphology only within the telic Aktionsart, which is the only Aktionsart with different aspectual markers (empty prefixes, prefixes, secondary imperfectivization, and suppletion). Each of the other Aktionsarten fall together with one specific type of marker, and thus they could not be used to test the role of morphological markers. As a result, the number of scenes that would most appropriately correspond to a telic verb had to be larger than the number of scenes used for testing the other Aktionsarten, in order for statistical tests to be applicable. This is one of the reasons why the telic Aktionsart is so predominant in both the comprehension and production data.

There is, however, another, less trivial reason that might partly be responsible for the predominance of the telic – and indeed the durative – Aktionsarten in the production test. As hypothesized in Chapter 6, there is possibly a difference in the appropriateness of the different Aktionsarten in different contexts. The telic Aktionsart seems to be perfectly adequate for a description of a scene in isolation. The same is true for the durative Aktionsart, and probably also for the semelfactive Aktionsart. At least the ingressive Aktionsart, however, seems to need to be embedded in a larger context. I will take up this issue in Chapter 10, where a fine-grained analysis of the use of the ingressive Aktionsart will show that this hypothesis is largely correct.

But this still does not answer the question of why the Aktionsart production scores do not develop over age. Unlike the comprehension experiment, in the description of isolated scenes it seems that the 3-year-olds, on average, behave the same as the 6-year-olds.

One reason for this might be the type of data elicited by the task. The description of isolated scenes is a relatively simple cognitive operation, manageable even by children of the youngest age group tested. In, for example, the description of complex events consisting of several subevents, such as found in more complex narratives, the cognitive operations required are much more complex. In the description of a complex event, the child must be able to recognize the interrelation of several events, causal and temporal connections, and continuity or discontinuity of referents. Such knowledge is not necessary for the description of an isolated event, and this might be

the reason why we do not find a development over age in the description of these scenes. This would mean that all children converge in their interpretation of the stimulus materials and their descriptions. Still, children of different age groups could in principle use different strategies in describing events. Whether indeed they do make use of different strategies on a different level – specifically, in the use of aspect – will be analyzed in more detail in the following.

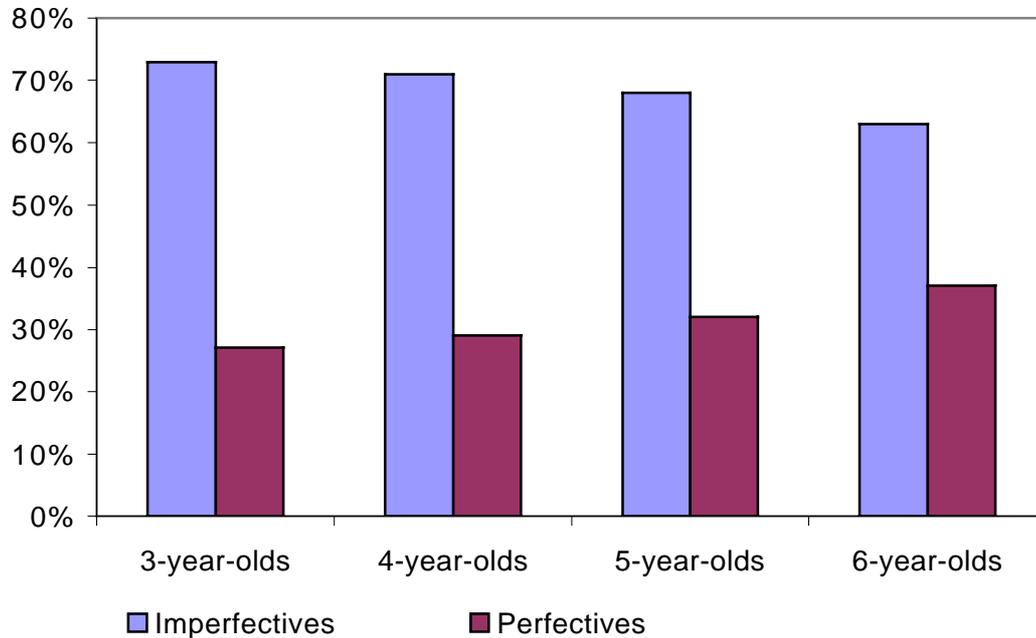
5.2 Distribution of aspect across age

5.2.1 General distribution of aspect

So far we have looked exclusively at the distribution of Aktionsarten in the production experiment across age. Now, in a second step, we need to analyze the overall distribution of perfective and imperfective aspect and determine whether children of different ages show a similar behavior in this respect as well.

First, we need to test Hypothesis 3, i.e., we need to test whether there is a correlation between the use of either the perfective or imperfective aspect with age. Figure 7.2 comprises all imperfective and perfective verbs independent of Aktionsart.

Figure 7.2: The distribution of aspect independent of Aktionsart



The mean percentages of imperfectives exceeds the mean percentage of perfectives in all age groups. Even though the Figure might suggest a development, it turns out that neither the use of the imperfective aspect nor the use of the perfective aspect correlates significantly with age (imperfective aspect and age: $r=-.0614$, $p=.710$; perfective aspect and age: $r=.0663$, $p=.688$). These results clearly falsify our Hypothesis 3, which assumed an even distribution of the perfective and imperfective aspect.

Figure 7.2 and the correlation, however, show only the general distribution of aspectual forms, which could be biased because duratives, which are more than 40% of all verbs, and the atelic Aktionsarten, i.e., delimitatives, semelfactives and ingressives are predetermined for aspect: for these Aktionsarten children do not have a choice between the two aspects. Duratives are necessarily imperfective and the other atelic Aktionsarten (i.e., the atelic change-of-situation Aktionsarten) are necessarily perfective. Since there is no significant difference in the use of these Aktionsarten across age (cf. above), a difference in aspect usage is already precluded for approximately half of the verbs used in the experiment.

To exclude this possible bias in our test, it is necessary to look at the telic group alone. Only in this group do children have an actual choice of aspect. Thus, even though children of all ages use roughly the same number of telic verbs, their behavior could still differ with respect to their preferred aspect within this category. We need to test whether there is a correlation between telic verbs and either the perfective or imperfective aspect.

5.2.2 Distribution of aspect within the telic Aktionsart

The comprehension experiment presented in Chapter 6 showed that telic verbs in the perfective aspect are understood best, whereas children of all ages scored very poorly with the other Aktionsarten. These results seem to strengthen the findings of the importance of the telic Aktionsart discovered in previous research. However, in this experiment I could not test the understanding of telic imperfective verbs and imperfective duratives. The crucial test would have been to test the understanding of telic imperfective verbs. This would be necessary to confirm the correlation between telic verbs and the perfective aspect. However, due to the nature of Russian aspect, it is impossible to test for this correlation. The imperfective aspect is the semantically unmarked member of the opposition. Thus, if the experimenter had asked the question in the imperfective aspect, there would have been no clear-cut right or wrong answer on part of the child. The reason for this is that the imperfective aspect, on the one hand, is used to express durative, ongoing actions and, on the other hand, it is used to state facts, and in this function approaches that of the perfective aspect. Thus, if the verbal prompt had been in the imperfective aspect, either of the pictures could have been chosen by the child and the answer would have been correct.

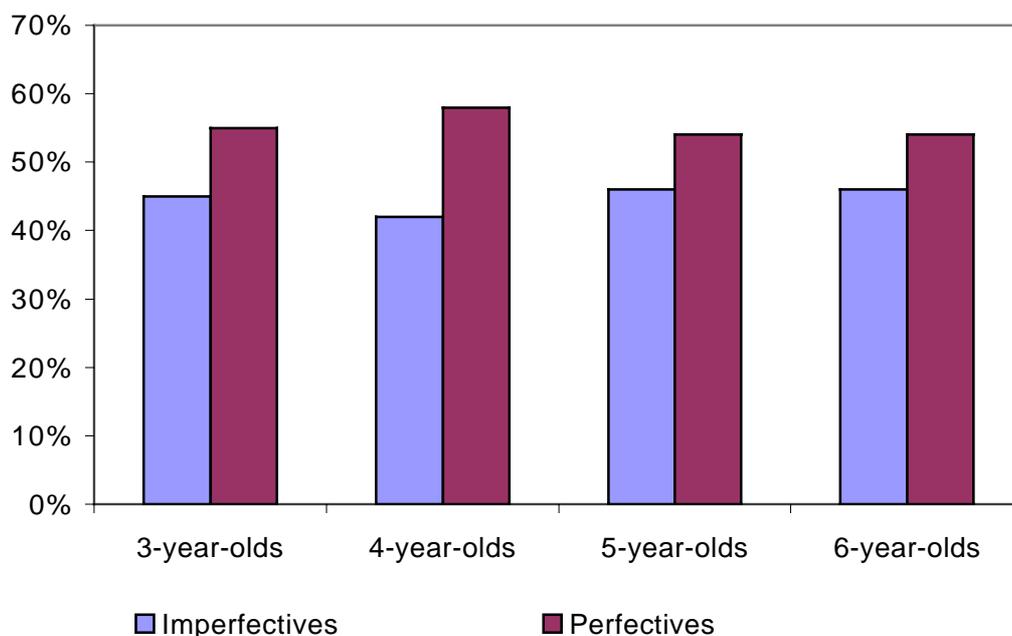
Further, to add the imperfective aspect to the prompts would have altered the research question considerably, complicated the analysis, and even more subjects with more items would have had to be tested to get results that could be statistically evaluated.¹ For these reasons, I tested only the understanding of verbs in the

¹ This would have more than exhausted the resources and time of one researcher. The test as it stands already took approximately 230 hours of pure testing time.

perfective aspect with varying Aktionsarten and morphological shapes. This excluded duratives from the experiment, because they come only in the imperfective aspect. The comprehension experiment thus strengthens only the finding that the telic Aktionsart corresponds well with the perfective aspect. Whether it corresponds equally well with the imperfective aspect was not tested. So far, we know only about the comprehension of perfective verb forms. Future research will have to determine the comprehension of imperfective verb forms.

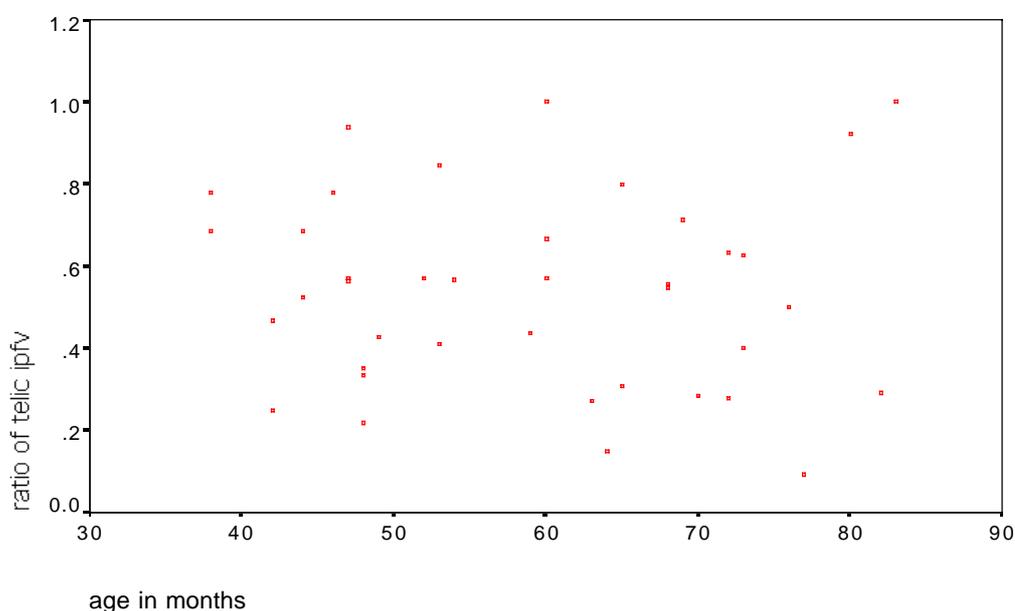
Now, we need to test whether there is a correlation between the telic Aktionsart and the perfective aspect in the production experiment, as proposed in Hypothesis 4. Given the prominence of telic aspectual pairs, i.e., telic pairs are the only pairs with two semantically identical partners, it might well be true that children use telic verbs in the imperfective aspect from early on with no less difficulty than in the perfective aspect. If this were the case, the correlation between the telic Aktionsart and the perfective aspect in the age range tested (3-6 year-olds) would be falsified. To get a clearer picture on the actual percentages used for perfective and imperfective telics, I summarize the mean percentages in Figure 7.3.

Figure 7.3: Mean percentage of imperfective and perfective telics



As shown in Figure 7.3, on average there is a slight preference for the perfective aspect within the telic group. However, we have to be aware that again there is considerable variation within the age groups (cf. Figure 7.4) and the percentages per se are nothing more than the crudest descriptive statistics used for illustration purposes only.

Figure 7.4: The use of imperfective telics over age



Even though there is a wide variation, all children tested in this experiment use imperfective telics. Further, the Spearman correlation coefficient confirms the impression we get from Figure 7.4 that there is no significant correlation whatsoever between age and the ratio of imperfective telics used by the children ($r=-.0450$, $p=.393$). These counts comprise all imperfective telic verbs. Hypothesis 4 about the correlation of the telic Aktionsart with the perfective aspect has been clearly falsified by this data. There is no strong correlation between the perfective aspect and the telic Aktionsart. This is an important result, because it contradicts the findings in a wide array of other languages.

There are two different sub-types of imperfective telic verbs and it might be that children treat these sub-groups of telic imperfectives differently.

First, there is a group of imperfective telics, which fall under the morphological category of secondary imperfectives as shown in (10).

- (10) *Maša nalivalaⁱ moloko sladkoe.* (Nataša, 3;6)
'Maša poured the sweet milk'.

The second group consists of suppletives. These suppletives are simplex verbs, but the child has to learn by heart which of the two partners is perfective and which is imperfective. Example (11) contains a suppletive that occurred frequently in the data of the production experiment.

- (11) *Konfetki klalaⁱ.* (Ira, 3;2)
'She was putting the candy (away/aside).'

The distribution of these different types of imperfective telics is illustrated in Table 7.2.

Table 7.2: Mean percentages of the different imperfective telic verbs over age groups

Age	Secondary imperfectives	Suppletives
3-year-olds	82 %	18%
4-year-olds	81%	19%
5-year-olds	89%	11%
6-year-olds	89%	11%

Since there is wide variation within the groups we cannot conclude from this table that there is a correlation with age. To test this we need to test whether there is a significant correlation of any of these groups with age. Again using the Spearman correlation coefficient, we find a significant negative correlation between age and suppletives ($r=-.3076$, $p=.028$). The correlation is negative, which means the older the children get the fewer of these forms they use. For secondary imperfectivization, which is the only marker that is a purely aspectual marker, we also find a correlation

with age (secondary imperfectives: $r=.2881$, $p=.038$). This correlation is positive. However, neither of these correlations is very strong.

Interestingly, in this context, secondary imperfectives do not seem to be difficult for children of all age groups. This runs counter to our expectation. Secondary imperfectives are morphologically and conceptually more complex than perfective telics on the one hand and duratives (which are always imperfective) on the other hand. They are systemically (general semantic markedness) and morphologically marked. However, since secondary imperfectives are exactly the verbs that correspond best to some of the scenes depicted they do occur in this context. For instance, in one of the scenes Toša is trying to open the lid of a glas, but the result is not seen, i.e., he is trying without success. This scene is described by a 3-year-old as follows.

- (12) *Toša otkryval banočkej (=banočku) kryšečkej.* (Miša 3;2)
'Toša opened the glass with a lid.'

It is an fact intriguing fact that even 3-year-olds do not show any difficulties with the production of secondary imperfectives in the past tense. This shows that we need to create the appropriate contexts to trigger specific forms.

6. Conclusions

One of the two main questions of this chapter was: if we had tested the *Primitive Category Hypothesis* with this production test alone, would we have come to the same results as in the comprehension experiment? This question has to be answered with no. The interpretation of the data would have led to a very different answer. In the production experiment we did not detect any development across Aktionsarten and aspect. If we had only this experiment, we might conclude that there is no development in how children treat individual Aktionsarten. This could lead to very wrong conclusions if we generalized from the results of this one production experiment to

the general developmental path of Aktionsart acquisition. This shows that one experiment can never be enough to make well-informed statements about the acquisition process. Language acquisition is nothing else than a generalization of behavior over context. To make such a generalization, we need to look at several different levels of textual complexity in which the form typically occurs.

Our second question in this chapter was whether the correlation between the telic Aktionsart and the perfective aspect which was found in a large number of languages holds true for Russian as well.

The results of this production experiment do **not** strengthen the results of a correlation between the telic Aktionsart and the perfective aspect found in other languages. In this experiment, we find no significant correlation between age and the use of telic perfectives or imperfectives. Within the telic group, both aspects are distributed more or less evenly. All children who took part in the experiment used telics in the imperfective aspect, i.e., there was no single child that did not use a telic verb in the imperfective aspect, but there were two children who used telics exclusively in the imperfective aspect (age 5;0 and 6;9). From age 3 onward children used both morphological types of imperfective telics (secondary imperfectives and suppletives). This finding is very important, because it shows that the correlation found in other languages does not hold for Russian in general. There are at least some contexts in which this correlation does not hold.

It is very important, however, to reiterate that these results hold for this one context only and to conclude from this a general tendency in the acquisition of aspect would be ill-guided. Still, the data show that at least from age 3 onward, children have no difficulties using telic imperfectives in specific contexts.

As mentioned before, duratives are predetermined for aspect; i.e., children do not have a choice and the imperfective aspect is their only option. For duratives it could only turn out that children prefer a specific tense with this Aktionsart, e.g., they might prefer the present tense with durative verbs and restrict their past tense use to telic verbs. No such correlation whatsoever was found in the data. All children, except for

one 3-year-old (in two instances) and one 6-year-old, used the past tense for all verbs regardless of Aktionsart. This behavior, however, was not statistically significant.

If we had only the results of this experiment, we could conclude that aspect is already fully developed in 3-year-olds, and there is no difference whatsoever between the aspectual behavior of preschoolers age 3-6. However, these results are in obvious conflict with the results of the comprehension experiment. How can we explain these differences? This puzzle will be resolved in Chapter 10, which compares the results across the levels of discourse complexity tested in this dissertation. In a first step, however, we will test whether the findings also hold for structurally more complex context such as the description of short events as presented in Chapter 8 and the narration of a complex story as analyzed in Chapter 9.

Chapter 8: The Description of Short Events (Level 2)

1. Introduction

This chapter shows that the choice of context of an experiment can determine the results we get. We do not find the same distribution of aspect in different contexts.

In the previous two chapters we have compared the comprehension and production of isolated utterances describing single events. In the comprehension experiment (Chapter 6), we found a strong correlation between the understanding of the perfective aspect and the telic Aktionsart. This is in line with one of the main results in cross-linguistic research. But the results of the Level 1 production experiment (Chapter 7) were at odds with this. This chapter aims at testing whether the finding of the production experiment of Level 1 holds for the use of Russian aspect in general, or whether the results are due to the particular level of discourse complexity we have been looking at so far.

To test this, I designed an experiment testing the use of aspect on Level 2, i.e., in a complex event. The stimuli consist of a short cartoon (video clip) showing a complex event. The level of discourse complexity investigated here is more elaborated than the one in the previous two experiments. In this experiment, verbal forms do not occur in isolation, but are instead concatenated with other utterances. The experiment consists in the elicitation of a short narrative describing a complex event.

In Chapter 4, I claimed that it is crucial for an acquisition study to include the different functions of aspect. In the production experiment of Level 1 both the perfective and the imperfective aspect were mainly used to state a fact, to describe an isolated event. In a more complex narrative, such as in the Level 2 experiment, the perfective aspect is predominantly associated with the sequencing of events, i.e., with

the plot line or the main story line. The imperfective aspect is mainly used for backgrounding and the description of the scene. In such a narrative it thus becomes relevant whether an event is depicted as foreground or background, or better whether it is perceived as such by the children. This is an additional factor relevant for the choice of aspect.

The chapter is structured in the following way: First, I lay out the design of the study and describe the exact procedure of the experiment. Second, I introduce the hypotheses about the use of Aktionsarten and aspect in this experiment. Third, I present the results of the experiment and compare them to the results of the production experiment of Level 1 presented in Chapter 7. Fourth, I analyze the variation we find in the stories told by the children both within and across age groups. Finally, I put these results in the broader perspective of this dissertation and of acquisition research in general.

2. Design of the experiment and procedure

In this study, like in the previous two experiments, I worked with video material. The use of video material as stimuli has proven to be successful in the experiments testing the understanding of isolated utterances. Thus, I decided to again rely on video material to test how children describe a complex event. This avoided the problem that young children may have difficulties recognizing a story in still pictures.

For this experiment I used video stimuli first put together in 1989 by Lourdes de León and John Haviland at the Max Planck Institute for Psycholinguistics in Nijmegen. The stimuli were cut from a series of German educational cartoons designed for preschoolers and broadcast on a regular basis on a German TV show called *'Die Sendung mit der Maus'* ('The show with the mouse'). The cartoon is very popular among children and successfully captures the attention of preschoolers. The two protagonists are a gray mouse and a pink elephant. The parts of the cartoon I chose as a stimulus were especially useful for a study of aspect. The children were shown five short clips, which all essentially had the same structure: the mouse tries to

do something and fails; the attempt is repeated twice, and then the mouse either tries a new, now successful solution, or something else happens in which the elephant is involved.

For this dissertation I evaluated only one clip out of the five.¹ The content of the clip was the following:

The little mouse holds a huge banana, bigger than herself. Next to her lies the little elephant snoring. The mouse starts peeling the banana, but after the first peel a second layer appears and she peels further. Several more layers appear. In the end she finally has the edible part of the banana in front of her. At this point the little elephant wakes up, sees the peeled banana and with one bite snaps it away with his trunk and eats it up. The mouse remains without a banana and looks very unhappy.

This video clip was shown to 39 children, age 3 to 6 (eight 3-year-olds, seven 4-year-olds, twelve 5-year-olds, and twelve 6-year-olds). Again, all children were tested in kindergartens in the center of St. Petersburg. The test took place in a separate room and each child was tested individually. None of the children took part in the other experiments. This was done to ensure that the familiarity with the experimenters and more generally the familiarity with an experimental setting did not influence the results.

Again, the same two experimenters conducted the experiment. As in the other experiments, the native speaker of Russian interacted with the child during the experiment. The other experimenter took care of the technical procedures. The experimenter who interacted mainly with the children was not familiar with the precise research questions. The descriptions of the children were audio-taped and later transcribed by another native speaker of Russian, who was equally unfamiliar with the research question.

The experimenter interacting with the children was provided with the instructions for the child, which were simple enough to be understood by 3-year-olds. She read the

¹ Since all five films have the same structure, it would not add to the question of this dissertation to evaluate all films. In contrary, it would distract from the original goal of the dissertation, namely to compare different levels of discourse complexity. For this reason I restricted this analysis to one film. The other films will be evaluated in future research.

instructions slowly in a non-reading voice and then asked the child whether s/he understood the task; if necessary the instructions were repeated. The child was told to narrate the content of some short video clip to a toy lion (hand puppet) who could not see very well and wanted to know what was going on in the story. I chose this strategy again since it already has proven to be successful in the production experiment of Level 1 (Chapter 7). The child was asked to tell what happened after the video clip stopped. The screening of the clip was done in two versions. Every child was presented with both versions in sequence.

In Version 1, I showed the clip in two parts. After each part the child was asked to tell what had happened. First, I showed the clip up to the point before the mouse was about to eat the banana, i.e., before the elephant grabbed the banana. The video was stopped, and the child was asked to tell what had happened. The questions that served as prompts were the same as the two questions in the production experiment of Level 1, i.e., *Čto tam slučilos*^p 'what happened there?' or *Čto tam bylo*ⁱ 'what was/happened there?'. Then, after the child had described this part of the film, the rest of the film, in which the little elephant grabbed the banana, was shown to the child. Again, the child was asked to tell the toy lion what had happened in the story.

Version 2 presented the story as a whole. The toy lion (hand puppet) told the child that he wanted to hear the story again. The child was told that the cartoon would be shown again to him or her so that s/he could then tell the story again. After this second screening, the child was asked to tell the story again. This was done with the same prompts as in Version 1.

I administered the experiment in this way in order to check whether children alter their aspect usage depending on the knowledge they have about a subject. In Version 1, they did not know how the story would end, and they were asked to describe a repeated action without knowing its outcome. In contrast, in Version 2 children had already seen the clip twice, i.e., they were quite familiar with its content when retelling it.

3. Hypotheses

First, one would expect that the preferred Aktionsarten are telics and duratives. This expectation is based on several reasons. First, the telic Aktionsart includes goals or results in its semantics. A narrative is about sequenced actions which usually have a result, i.e., one action is finished before the next starts. Goals and results are usually central to human interest and stories. The durative Aktionsart includes actions which are another main focus of human communication. Further, duratives are always imperfective and thus the unmarked member of the general semantic opposition perfective/imperfective. Second, Forsyth's (1972) frequency analysis of aspectual forms in literary texts confirmed the predominance of telic perfectives and durative imperfectives (see Chapter 3). Third, we found a similar distribution in the production experiment of Level 1. In this experiment, in contrast to the Level 1 experiment, however, I expect the telic Aktionsart to be predominant over duratives. These expectations are formulated in Hypothesis 1:

Hypothesis 1:

Telics and duratives will be the predominant Aktionsarten in this experiment. Telics will be stronger than duratives, in contrast to the production experiment of Level 1.

There are two reasons why in this experiment I expect telics to be more frequent than duratives. First, the actions depicted in the story are predominantly goal-directed, and we can expect that this is reflected in the stories of the children. Second, I expect children to concentrate mainly on the plot, which consists exclusively of goal-directed actions. Thus, in Version 1 of the experiment, I expect children to predominantly make use of the telic Aktionsart.

Further, in Version 1 of the experiment, I expect the perfective aspect to be the predominant aspect.

Hypothesis 2:

In Version 1, children use more perfective than imperfective verbs.

As argued in Chapter 5 the unmarked aspect for the plot line in a story are telic verbs in the perfective aspect. The perfective aspect is predominantly used to mark the foreground in a narrative (cf. Forsyth 1970, Hopper 1979). Since I expect children to concentrate on the plot of the story, I expect them to chiefly use verbs in the perfective aspect.

For the first telling of the story (Version 1), I expect the distribution of aspect within the telic Aktionsart to be different from the distribution in the experiment of Level 1. Thus, depending on context, I expect different distributions. Specifically, I expect that the distribution of the Level 2 experiment will correspond to the distribution found in other aspect languages.

Hypothesis 3:

The telic Aktionsart correlates with the perfective aspect.

If the distribution of aspect differs in different contexts we can expect that children learn aspect with the help of these contexts. This is part of the general *Hypothesis of context-driven learning* proposed in the Introduction.

I furthermore expect that if there is a difference in the percentage of perfective and imperfective telics in the two versions, there will be more imperfective telics in Version 2 than in Version 1.

Hypothesis 4:

In Version 2 of the story more telic imperfectives will be used than in Version 1.

This is due to the structure of the story in the video clip. The mouse tries several times to peel the banana to get to the inner part. These attempts could suitably be summarized with one telic verb in the imperfective aspect, known as the conative function of the imperfective aspect. The conative function is especially used for attempts with an anticipated but as yet unattained goal. Since by now the children have already seen the clip twice, and they know very well what has happened, we can expect them to

wrap the events up, instead of repeating the same action in the perfective aspect three times.

4. Results and Discussion

4.1 Version 1

4.1.1 Distribution of Aktionsarten over age

In a first step, I analyze the general distribution of Aktionsart over age for Version 1 of the experiment, as shown in Table 8.1.

Table 8.1: Mean percentages of Aktionsarten across age groups in the Level 2 production experiment

Age	Telics	Duratives	Ingressives	Delimitatives	Semelfactives
3-year-olds, n=8	56 %	37%	3%	0%	4% ¹
4-year-olds, n=7	60%	40%	0%	0%	0%
5-year-olds, n=12	74%	18%	5%	2%	1%
6-year-olds, n=12	64%	29%	5%	0%	1%

As in the production experiment of Level 1, telics and duratives are the most frequent Aktionsarten. However, in this experiment telics, are by far the larger group, at least for the 5- and 6-year-olds (Table 8.1). This corroborates Hypothesis 1.

Table 8.2 compares the distribution of telics and duratives in the two production experiments.

¹ This value is entirely due to the performance of one child.

Table 8.2: *Telics and duratives across the production experiments of Level 1 and Level 2*

	Production experiment Level 1		Production experiment Level 2	
	Telics	Duratives	Telics	Duratives
3-year-olds	40 %	57%	56%	37%
4-year-olds	42 %	54%	60%	40%
5-year-olds	44 %	51%	74%	18%
6-year-olds	44%	46%	64%	29%

We can see from Table 8.2 that the distribution of telics and duratives is reversed in the two experiments. In the experiment of Level 1, duratives are predominant; in the Level 2 experiment in contrast, telic verbs are by far more frequent.

The difference in the frequency of telics and duratives in the two experiments might be partly due to the stimulus material. Whereas in the experiment of Level 1, only one third of the scenes showed pure actions, in this stimulus material nearly all the acts performed by the protagonists had a goal and/or result. This fact is reflected in the distribution of the telic and durative Aktionsarten. Again, as in the other experiments, the other Aktionsarten played only a marginal role. None of these Aktionsarten shows a significant correlation with age, as shown by the Spearman correlation coefficient (telics: $r=.1120$, $p=.497$; duratives: $r=-.1562$, $p=.342$; ingressive: $r=.2228$, $p=.173$; semelfactives: $r=.1043$, $p=.528$, delimitatives: $r=.030$, $p=.856$).

Interestingly, in the Level 2 experiment, ingressive, the complementary Aktionsart of the telic Aktionsart seem to be the strongest Aktionsart among the atelic change-of-situation Aktionsarten. In the production experiment of Level 1 the ingressive Aktionsart was not more frequent than semelfactives or delimitatives. An example of the use of an ingressive verb in the Level 2 experiment is the verb *zaxotelos^p* 'began to want', given in (1).

(1) Julja 4:10

*C: *prinesla^p myška banan.*

'the mouse brought a banana'

*C: *i kožu tak vybrosila^p.*

'and she threw away the peel.'

but their distribution is context-dependent: in the Level 2 experiment, the telic Aktionsart is predominant, whereas in the Level 1 experiment it is duratives that are more frequent.

4.1.2 Distribution of aspect over age

4.1.2.1 General distribution of aspect

So far, we have only discussed the distribution of the different Aktionsarten and not aspect proper. Now, in a second step, we need to look at how children treat aspect in more detail. Before I offer a more detailed analysis of the aspectual forms used by children of different age groups, I will again show the general distribution of aspectual forms, summarized in Table 8.3. Table 8.3 comprises the average of aspectual forms, independent of Aktionsarten, used by the children of the different age groups, compared with the results of the production experiment of Level 1.

Table 8.3: Mean percentage of imperfectives and perfectives in the production experiment of Level 1 and Level 2

Age	Prod. Experiment Level 1		Prod. Experiment Level 2	
	Imperfectives	Perfectives	Imperfectives	Perfectives
3-year-olds	73%	27%	41%	59%
4-year-olds	71%	29%	41%	59%
5-year-olds	68%	32%	26%	74%
6-year-olds	63%	37%	40%	60%

Children of all age groups use more perfectives than imperfectives in the description of the mouse film, i.e., in Version 1 of the Level 2 experiment. If we compare the mean percentage of the two aspects in the two production experiments, we see that their distribution looks reverse. In the production experiment of Level 1, the imperfective aspect is predominant; in the production experiment of Level 2, the

perfective aspect dominates. Thus, not only the distribution of Aktionsarten, but also the distribution of aspect differs from context to context.

These results corroborate our hypothesis about aspect usage in the descriptions of Version 1 of the experiment (Hypothesis 2). In the more complex narratives of Level 2, children mainly concentrate on the plot. To tell the plot of a story, the perfective aspect is the most unmarked choice (Chapter 5). The tendency to prefer perfectives in the Level 2 experiment is especially pronounced in the 5-year-olds who used perfectives in 74% of the cases.

This shows clearly that the use of aspect depends on the level of discourse complexity, i.e., it matters whether we are dealing with isolated utterances or embedded and concatenated utterances. This lends considerable support to the *Hypothesis of context-driven learning*. Level 1 asks more for the statement-of-fact function of the imperfective aspect, whereas Level 2 is a context that suggests the concatenation of utterances expressing a sequence of goal-directed actions. This goes together with the telic Aktionsart being preferred over the durative Aktionsarten in this experiment. This distribution seems to suggest that a shift in the use of the perfective and imperfective aspect occurred in accordance with a shift in the preference of the telic and durative Aktionsarten. The frequency of the other Aktionsarten remained more or less the same.

Further, as in the production experiment of Level 1, there is no significant correlation between age and the use of perfective or imperfective aspect (perfective: $r=.0502$, $p=.762$, imperfective: $r=-.0502$, $p=.762$).

However, in order to get an unbiased picture of the distribution of perfective and imperfective aspect we need to focus on the distribution of perfective and imperfective aspect in the telic Aktionsart alone, because all other Aktionsarten are predetermined for aspect and no choice is available. This is what I do in the following.

4.1.2.2 Distribution of aspect within the telic Aktionsart

As mentioned earlier, the telic Aktionsart allows a choice between the perfective and imperfective aspect without entailing a change in meaning and/or argument structure.

In the production experiment of Level 1, children of all age groups showed a slight preference for the perfective aspect for telics. Table 8.4 compares the distribution of aspect within the telic Aktionsart in both production experiments.

Table 8.4: Mean percentage of perfective and imperfective telics in the production experiments of Level 1 and 2

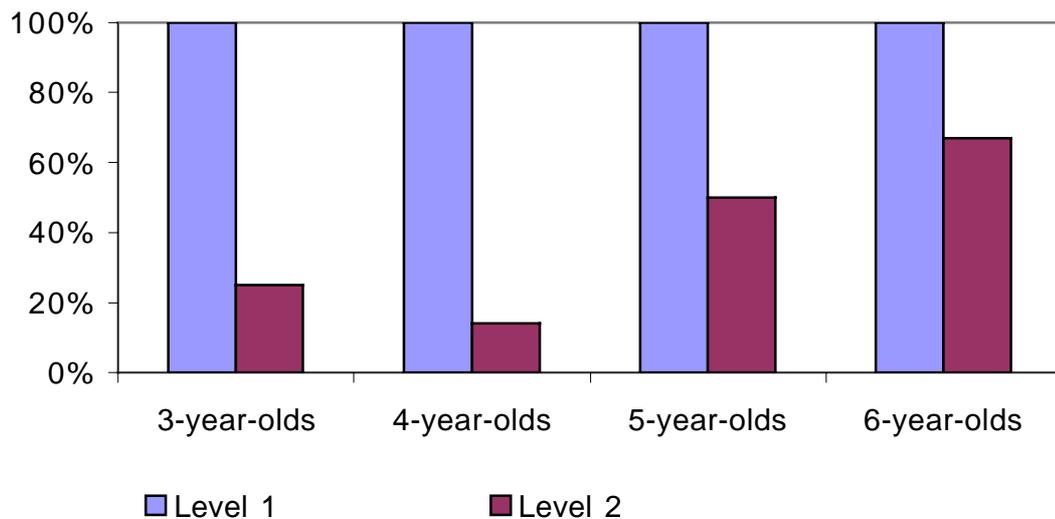
Age	Production Experiment Level 1		Production Experiment Level 2	
	Imperfectives	Perfectives	Imperfectives	Perfectives
3-year-olds	45%	55%	9%	91%
4-year-olds	42%	58%	2%	98%
5-year-olds	46%	54%	10%	90%
6-year-olds	46%	54%	16%	84%

Unlike the production experiment of Level 1, children show a very strong preference for the perfective aspect within the telic Aktionsart. Thus, the predominance of the perfective aspect cannot be explained by a simple increase of the telic Aktionsart, because it is the use of aspect **within** the telic Aktionsart that differs significantly in the two experiments.

Further, unlike the production experiment of Level 1, we find a correlation between aspect and age within the telic Aktionsart (perfective aspect: $r = -.3722$, $p = .020$). Thus, there is a negative correlation of use of the perfective aspect within the telic Aktionsart and age. This means that the older the children get, the smaller is the percentage of perfective aspect within the telic Aktionsart, and the more imperfective telics are used. Still the perfective aspect is very much predominant for the 5- and 6-year-olds as well. These findings strongly corroborate Hypothesis 2 about the preference for the perfective aspect in this experiment.

Moreover, note that not only does the number of telic imperfectives increase with age, but also the number of children using telic imperfectives increases, as illustrated by Figure 8.2.

Figure 8.2: Subjects using any telic imperfectives in the production experiments of Level 1 and 2.



In the production experiment of Level 1, all children from age 3 onward used telic imperfectives; there is no difference whatsoever between age groups. This is not true for the production experiment of Level 2. Only 25% of the 3-year-olds use telic imperfectives in the Level 2 experiment increasing to 67% in the 6-year-olds. Thus, in this experiment we find a correlation between the use of imperfective telics and age ($r=.4287$, $p=.006$). It seems that on Level 2, the imperfective aspect for telics poses more difficulties for the younger age groups. This goes along with the tendency for the younger children to use more simplex verbs in describing sequenced events. In the experiments of Level 1, secondary imperfectives are produced equally in all age groups.

The comparison of the use of telic imperfectives in the two experiments shows that children do not have a difficulty with telic imperfectives *per se*, but their use depends on context and on age in specific contexts. In isolated utterances the imperfective aspect is more frequent and the statement-of-fact function seems to be

very typical for this context, but less typical in a more complex description. In the experiment of Level 2 children use far fewer telic verbs in the imperfective aspect than in the Level 1 experiment. This shows that from early on children use aspect in a context-dependent way, thus confirming Hypothesis 3 and at the same time the *Hypothesis of context-driven learning*.

If we had focused only on one context, e.g., on the Level 2 experiment, we would have come to the same results as other aspect studies. It is only when we compare aspectual behavior on different levels of discourse complexity that the real picture emerges. The difference in distribution also shows that it is unwarranted to make generalizations from one context to another.

4.1.3 The distribution of tense within the durative Aktionsart

Thus far we have only looked at the telic Aktionsart and its correlation with aspect. The other dominant Aktionsart, i.e., duratives, is necessarily imperfective and hence does not allow for a choice of aspect. However, it does allow for a choice of tense. In the experiment of Level 1, this Aktionsart was used with very few exceptions in the past tense across all age-groups. Table 8.5 shows the distribution for the experiment of Level 2.

Table 8.5: Distribution of tense within the durative Aktionsart across age

Age	present tense	past tense
3-year-olds	48%	52%
4-year-olds	26%	74%
5-year-olds	10%	90%
6-year-olds	2%	98%

As is clear from Table 8.5, the younger the children the more they use duratives in the present tense: 48% of the duratives used by 3-year-olds are in the present tense, compared to a mere 2% in the 6-year-olds. Indeed, the Spearman correlation coefficient confirms that there is a negative correlation between the use of duratives in the present tense and age (duratives: $r = -.3256$, $p = .043$): the younger the children

the more imperfective verbs they use in the present tense. This behavior confirms the findings in other languages, which find a preference in younger children to use the imperfective aspect in the present tense.

Thus, there seems to be a significant development over age towards the use of past tense in duratives. This development in fact holds for all verbs, because telics are always used in the past tense.

Within the group of imperfective telics, children had a choice between the present tense and the past tense too. However, none of the children used the present tense for imperfective telics.

4.1.4 Types of telic imperfectives used

The question now arises what kind of imperfective telics children use in this experiment. In the production experiment of Level 1, secondary imperfectives were by far the strongest group across ages.

Table 8.6: Mean percentages of two types of imperfective telics in the Level 2 experiment.

Age	Secondary imperfectives	Suppletives and stem alternations
3-year-olds	50% (1/2)	50% (1/2)
4-year-olds	0% (0/1)	100% (1/1)
5-year-olds	0% (0/10)	100% (10/10)
6-year-olds	15% (2/13)	85% (11/13)

As we have seen before (cf. Figure 8.2) there is a general increase over age in the use of telic imperfectives. Except for the 3-year-olds, the preferred type of imperfectives is suppletives or verbs where the imperfective aspect is marked by stem alternation. However, we need to keep in mind that the number of telic imperfectives in this experiment is generally very small, especially for the group of 3- and 4-year-olds. Still, the difference between the distribution in the two production experiments is striking. This again shows us that the use of types of verb forms is strongly

dependent on the context. One could now argue, that this of course has to be that way, because the two experiments involve different contexts, which suggest different verbs. However, even if the context suggested the use of specific verb forms children still could avoid them, by choosing a description with another verb, e.g., a simplex verb. The results of the two production experiments compared show clearly that children are able to produce both forms, but do so in response to specific contextual demands.

There is one interesting feature of the use of the imperfective aspect, especially in the use of telic imperfectives which is worth mentioning. If children want to express long duration or repetition of an action they often do this by reduplicating the verb. A typical example of such a reduplication is given in (2):

(2) Dima 5;8

*C: <i>tam myšonok stojalⁱ i našel^p očēn'</i>	'there the little mouse was standing,
<i>bol'šoj banan.</i>	and he found a big banana'
*C: <i>on načal^p ego očiščatⁱ.</i>	'he started to clean it.'
*C: <i>a tam byloⁱ mnogo korok.</i>	'but there were many peels'.
*C: <i>i on ix očiščalⁱ- očiščalⁱ.</i>	'and he was cleaning-cleaning them.'
*C: <i>a potom on banan očisti^p i posmotrel^p.</i>	'and then he had cleaned it and looked.'

These kind of repetitions are meaningful and not comparable, for example, to repetitions in which a child hesitates and repeats a word in order to continue an utterance where she was interrupted. This is shown by a continuous intonation contour.

Reduplication has to be accounted for in the coding and analysis of the data. To do so, I divided the imperfective telics and the duratives in the past tense (durative present is not relevant for this category) into two groups each, imperfectives without repetitions and imperfectives with repetitions. In the group representing the repetitions, each verb was counted once per instance of repetition, independent of the number of repetitions. Table 8.1 illustrates the distribution of repeated and non-repeated imperfectives.

Table 8.1: The use of imperfectives

Age	Telic imperfectives		Duratives	
	Repetitions	No-repetitions	Repetitions	No-repetitions
3-year-olds	0% (0/2)	100% (2/2)	11% (1/9)	89% (8/9)
4-year-olds	100% (1/1)	0% (0/1)	13% (2/15)	87% (13/15)
5-year-olds	30% (3/10)	70% (7/10)	0% (0/19)	100% (19/19)
6-year-olds	46% (6/13)	54% (7/13)	6% (2/35)	94% (33/35)

The function of reduplication is inherited from the function the imperfective has, dependent on the Aktionsart. The number of duratives by far exceeds the number of telic imperfectives (cf. the total numbers in Table 8.7. However, the raw number of reduplicated telic imperfectives exceeds the number of reduplicated duratives).

It seems that reduplication is mainly used in the context of this experiment as a means of expressing an attempt to reach a goal, i.e., the conative function of the imperfective aspect. The reduplication emphasizes this function. This again fits well with the main focus of this video clip, i.e., the mouse trying to get to the inner part of the banana. When a durative is reduplicated, the function of the reduplication is different. In this case, reduplication emphasizes the duration of the action. Thus the repetition serves as an intensifier, which reinforces the semantics of the Aktionsart and, as a consequence also inherits the respective functions of the imperfective aspect. Reduplication of telic imperfectives emphasizes the process leading to a potential goal, while reduplication of duratives emphasizes the extended duration of the process. This shows how Aktionsart can interact in a significant way with the functions of aspect.

4.2 Version 2

The main goal of the procedure used in this experiment was to find out whether children change their use of aspect dependent on the knowledge they have about an event. In Version 1, children did not know the outcome of the story when they told

the first part of the video clip. They learned about the outcome only after they had already told the story up to that point. Thus, they could not take the outcome into consideration when they described the first part of the scene. This is different in the second telling of the story. When the child was asked to tell the story again, s/he already had seen the clip twice, once in the piecemeal version and a second time without interruption.

The difference of the two versions is evidenced in the length of the two stories as shown in Table 8.8.

Table 8.8: Mean number of verbs used in the two stories

	Version 1 of the story	Version 2 of the story
3-year-olds	6.5	4.5
4-year-olds	9.1	6.4
5-year-olds	10.4	8.6
6-year-olds	10.2	12

As Table 8.8 shows, there is a steady increase in length of the stories over age (first telling $r=.4350$, $p=.006$; second telling: $r=.5047$, $p=.001$). This is common to both versions, except for Version 1 of the 6-year-olds.

There are several possible reasons why stories from Version 1 are shorter than stories from Version 2: after having seen the film twice, the story teller is familiar with the most important points and can wrap up the story more efficiently. Another reason might be that the child lost interest in the task after having just told the film and now being asked to retell the story again. Further, in Version 2, the child has to remember the whole film, which requires significantly more memory capacity than just retelling two short pieces. This might result in a memory overload, and as a result, the child will leave out some parts of the story s/he had mentioned in Version 1. But the question is whether there is also a difference in the use of Aktionsarten and aspectual forms between the two versions.

4.2.1 Distribution of Aktionsarten over age

In the comparison of the Level I production experiment and Version 1 of the mouse-films, we realized that the distribution of the telic and durative Aktionsarten was reversed. The telic Aktionsart was predominant in the narration of the mouse clip. This confirmed Hypothesis 1, which states that the durative and telic Aktionsarten are the most frequent Aktionsarten, with the telic Aktionsart being predominant in this experiment. Table 8.9 compares this with the distribution of Aktionsarten in the stories collected in Version 2 of the experiment.

Table 8.9: Distribution of Aktionsarten in the two versions of the stories

Version 1

	Telics	Duratives	Ingressives	Delimitatives	Semelfactives
3-year-olds	56%	37%	3%	0%	4% ¹
4-year-olds	60%	40%	0%	0%	0%
5-year-olds	74%	18%	5%	2%	1%
6-year-olds	64%	29%	5%	0%	1%

Version 2

	Telics	Duratives	Ingressives	Delimitatives	Semelfactives
3-year-olds	71%	29%	0%	0%	0%
4-year-olds	64%	32%	2%	2%	0%
5-year-olds	74%	14%	10%	1%	1%
6-year-olds	76%	15%	7%	0%	1%

Table 8.9 suggests that there are no dramatic differences between the use of Aktionsarten in the two versions. Thus, the distribution of Aktionsarten in the two versions of the story are very similar and are in stark contrast to the distribution of Aktionsarten in the Level 1 production experiment. This suggests that the distribution of Aktionsarten is context-dependent. There is a slight tendency to use more telic verbs in Version 2 of the story. The two versions differ most in the 3-year-olds and

¹ This number is entirely due to the performance of one child.

the 6-year-olds. However we have to keep in mind the extreme individual variation already noted above.

Now, in a second step we will compare whether there is an overall difference in the use of aspect in the two versions of the story.

4.2.2 Distribution of aspect over age

4.2.2.1 General distribution of aspect

I have hypothesized that the use of the perfective aspect will be stronger in Version 1 than in Version 2 of the experiment (Hypothesis 4), i.e., children will use more imperfective telics in Version 2 of the story. This expectation is grounded in the type of story that is shown to the children, the degree of the children's familiarity with it, and the expectation that they combine the repetitions into one utterance instead of repeating the same action over and over. Thus, I expect children to make use of the conative function of the imperfective aspect.

Table 8.10 illustrates the general distribution of aspect in the two versions of the story.

Table 8.10: General distribution of aspect in Version 1 and 2 of the story

	Version 1		Version 2	
	Imperfectives	Perfectives	Imperfectives	Perfectives
3-year-olds	41%	59%	48%	52%
4-year-olds	41%	59%	38%	62%
5-year-olds	26%	74%	22%	78%
6-year-olds	40%	60%	26%	74%

As was the case in the use of Aktionsarten in the two versions of the story, the use of aspect likewise does not change dramatically from Version 1 to Version 2. I had expected that the imperfective aspect would be stronger in Version 2. In contrast to this expectation the perfective aspect turned out to be even stronger in Version 2 than

in Version 1. This falsifies Hypothesis 4 about the use of the conative function of the imperfective aspect in Version 2. Instead of wrapping up the repeated actions, children of all age groups preferred to repeat them in exactly the same way as in Version 1. Interestingly, this preference is part of a more general preference for perfect or almost-perfect repetition. It turned out that not only does the vocabulary tends to be repeated in Version 2 of the experiment, but sometimes also the precise way of phrasing utterances. Sometimes every detail of a construction is repeated in exactly the same way, sometimes with variations. This is illustrated by the two versions in (6) and (7) volunteered by the same child, respectively (repeated items are boldfaced).

(6) Vika 5;8

Version 1

- | | |
|--|--|
| *C: <i>slonik spať</i> . | 'the little elephant was sleeping.' |
| *C: <i>a myška čistilaⁱ banan.</i> | 'and the mouse cleaned/peeled the banana.' |
| *C: <i>ej byloⁱ nikak.</i> | 'she didn't manage at all.' |
| *C: <i>ona očistila^p.</i> | 'she cleaned it.' |
| *C: <i>ešče očistila^p.</i> | 'she still cleaned it.' |
| *C: <i>slonik prosnulsja^p.</i> | 'and the little elephant woke up.' |
| *C: <i>i myška obliznulas^p.</i> | 'and the mouse licked (her lips).' |
| *C: <i>potom slonik s''e^p banan.</i> | 'then the little elephant ate the banana.' |
| *C: <i>myška posmotrela^p i rasstroilas^p.</i> | 'the little mouse looked and became sad.' |

Version 2

- | | |
|---|--|
| *C: <i>slonik spať</i> . | 'the little elephant was sleeping.' |
| *C: <i>myška prinesla^p banan.</i> | 'the little mouse brought a banana.' |
| *C: <i>načala^p očičat' ego.</i> | 'she started to clean it.' |
| *C: <i>potom očistila^p vtoroj raz.</i> | 'then she cleaned it a second time.' |
| *C: <i>tretij.</i> | 'third.' |
| *C: <i>slonik prosnulsja^p.</i> | 'the little elephant woke up.' |
| *C: <i>s''e^p banan.</i> | 'he ate up the banana.' |
| *C: <i>myška rasstroilas^p.</i> | 'the little mouse became sad.' |
| *C: <i>a slonik snova ljog^p.</i> | 'and the little elephant again lay down to sleep.' |

(7) Danja 6;9

Version 1

- *C: *žilaⁱ odna myška.* 'there lived a little mouse.'
 *C: *i u nix doma bylⁱ banan.* 'and at their home there was a banana.'
 *C: *ona.* 'she.'
 *C: *ona ego očiščalaⁱ-očiščalaⁱ - očiščalaⁱ.* 'she was cleaning-cleaning-cleaning it.'
 *C: *i tam v konce potom bylⁱ malen'kij banan.* 'and at the end there was then a small banana.'
 *C: *a potom slonik vzja^p i s''e^p étot banan.* 'and then the little elephant took and ate this banana.'

Version 2

- *C: *žilaⁱ myška.* 'there lived a little mouse.'
 *C: *ona prinesla^p domoj banan.* 'she brought home a banana.'
 *C: *očiščalaⁱ ego-očiščalaⁱ.* 'she was cleaning-cleaning it.'
 *C: *a tam okazalsja^p v konce malen'kij banan.* 'and there at the end appeared a small banana.'
 *C: *a slonik vzja^p i s''e^p ego.* 'and the little elephant took and ate it.'

The repetition of vocabulary and syntactic constructions is a rather strong tendency, which increases with age. This finding is also reflected in anecdotal evidence that when retelling something speakers in general tend to use the same vocabulary and constructions they chose when they first conceptualized it. This property of discourse can also be found in very young children. When children remember an event they tend to use the same construction to describe this event over and over. It is this discourse property that counteracts any possible effects on aspect use that Hypothesis 4 leads us to expect. Note, however, that children apparently need to learn this discourse property. These preliminary findings suggest that constructions are even more important for language acquisition than we have learned from the studies of Tomasello (1992) who showed that from early on children are sensitive to specific argument structures tied to individual verb forms.

In a third step, we need to test the distribution of aspect within the telic Aktionsart and compare it to Version 1 of the story.

4.2.2.2 Distribution of aspect within the telic Aktionsart

As mentioned in Chapter 7, we can measure the frequency in which perfective aspect forms are used only in the telic Aktionsart. Unlike the telic Aktionsart, all other Aktionsarten predetermine the aspectual choice as either perfective or imperfective. Table 8.11 shows the distribution of perfective and imperfective aspect in the two versions of the experiment within the group of telic verbs.

Table 8.11: Distribution of aspect within the telic Aktionsart

	Version 1		Version 2	
	Imperfectives	Perfectives	Imperfectives	Perfectives
3-year-olds	9%	91%	33%	67%
4-year-olds	2%	98%	20%	80%
5-year-olds	10%	90%	10%	90%
6-year-olds	16%	84%	15%	85%

For the 5- and 6-year-olds the use of aspect within the telic Aktionsart seems to be exactly the same. The relatively low percentage of perfectives in the 3-year-olds is due to three children. Two of them did not use any telics; one used only one verb in his retelling and this was a telic imperfective. Further, we need to keep in mind that the stories of the 3-year-olds are very short in the Version 1 and get even shorter in Version 2.

This might be due to a wide range of factors, such as children's concentration span, their interest in the task, etc. The slightly lower percentage in the 4-year-olds is due to one child who did not use any telics in his retelling of the story. Unlike in Version 1 of the story, where we found a significant correlation between the use of aspect and age (perfective aspect: $r = -.3722$, $p = .020$), there is no such correlation in Version 2 (perfective aspect: $r = -.0535$, $p = .753$).

To sum up: the two versions of the stories do not differ significantly. Instead of adapting their story as we might expect, many children tend to repeat themselves, often with identical wording. The main difference is that they shorten the story in Version 2.

4.3 On the variation within and across age groups

In the previous experiment, where we dealt primarily with simple utterances, the description of the scenes varied, but this variation was limited by the choice of Aktionsart and aspect, and by whether children chose to describe the event with a single utterance or with several utterances. In contrast, in the experiment with the mouse clip, where we deal with a description of a complex event, i.e., with several concatenated utterances, even more levels of possible variation are involved. Indeed, the scene descriptions vary greatly within and across age groups. Usually the narrative competence of a 3-year-old is very different from the narrative competence of a 6-year-old. Even as short a narration as the description of the banana scene requires the introduction of the protagonists, some reference-tracking, the understanding of the plot and a coherent description thereof, i.e., with the events told roughly in the order of their happening. The ability to tell a coherent story according to Russian (or general European) conventions or to describe a scene so that a listener who is not familiar with what is told understands it, is something a child learns over the years, and it clearly depends on the general cognitive development of the child. Some of the children's description across age groups are quite difficult to understand for an uninformed listener. Most of the 3-year-olds did not introduce the protagonists, nor did they set the scene. It is often unclear about which protagonist they speak, reference-tracking is not at all explicit. They often do not tell the story in the order of the events. Further, they often invent things not shown in the film. The following stories of two 3-year-olds illustrate these points and show the wide variation in story-telling ability within this age group.

(8) Ira 3;5

*C: <i>banan malen'kij stal^P.</i>	'the banana got small.'
*C: <i>bylⁱ banan.</i>	'there was a banana.'
*C: <i>nu xxx banančik.</i>	'aem a little banana.'
*C: <i>a slon tam spitⁱ potom.</i>	'the elephant sleeps there then.'
*C: <i>i myška s nim stoitⁱ [=?].</i>	'and the little mouse is standing [=stays?] with him.'
*C: <i>a myška+//</i>	'and the mouse..''
*C: <i>slon tam.</i>	'the elephant is there'.
*C: <i>smotritⁱ, kak on estⁱ.</i>	'he (or she, unclear) looks how he is eating'.
*C: <i>banan.</i>	'the banana.'
*C: <i>a potom.</i>	'and then'
*C: <i>a potom slon vzjal^P razgovarivat' s nim.</i>	'and then the elephant started talking to him.'
*C: <i>gde tam.</i>	'where there.'
*C: <i>xxx.</i>	
*C: <i>slonik s''e^P banan.</i>	'the little elephant ate the banana.'
*C: <i>a myške ničego ne ostavi^P.</i>	'and he did not leave anything for the mouse.'

Ira starts her story close to the end, with the result of the long peeling process. Then, she introduces the banana, but not the protagonists; instead she refers to them as if they were known to the interlocutor. The mouse is treated as an accidental actant and not as the protagonist. Ira does not tell a crucial part of the story, namely the peeling of the multiple layers of the banana, but invents a conversation between the elephant and the mouse that did not take place in the video clip: *a potom slon vzjal razgovarivat' s nim* 'and then the elephant started/initiated a conversation with him'. Then out of the blue, she states that the elephant ate up the banana without leaving anything for the mouse, thereby repeating herself, because she had stated (in fact, invented) earlier that the mouse had been watching how the elephant ate the banana. Thus, the whole plot of the story is missing and only scrambled piecemeal items are transmitted to the hearer. I know compare this story to the story of another 3-year-old girl, Vera (3;10).

(9) Vera 3;10

- *C: *myška razvoračivalaⁱ banan.* 'the mouse turned the banana.'
 *C: *takoj bol'šoj.* 'such a big one.'
 *C: *a tam slon spalⁱ.* 'and there the elephant was sleeping.'
 *C: *potom ona.* 'then she.'
 *C: *stol'ko.* 'so much.'
 *C: *u nejo stol'ko ne byloⁱ banan.* 'she'd never seen/had a banana that big before.'
 *C: *očiščatⁱ banan.* 'cleaning the banana'.
 *C: *slon na nejo posmotrel^p.* 'the elephant looked at her.'
- *C: *tam slon s''e^p banan.* 'there the elephant ate the banana.'
 *C: *potom myška zaplakala^p.* 'then the mouse started to cry.'
 *C: *i obidelas^p.* 'and she felt hurt'.

Vera (3;10), in contrast to Ira, introduces the protagonist when setting the over-all scene. Then, she describes the banana as very big, a piece of information that is crucial to the story. As a next step she introduces the other protagonist, the elephant, and mentions that he is sleeping. Then Vera gets a little unclear in her description about the actions of the mouse; she simply states that she did not get to the banana. Further, and this is important, she mentions the elephant again, who looked at the mouse: *slon na nejo posmotrel* 'the elephant looked at her'. This shows that she anticipates that the elephant will play a further role in what is going to come. This is the cut-off point, where the video clip was stopped in Version 1. In the second part of the story, she states the fact that the elephant ate the banana and that the mouse is very sad about it. Thus, all in all this is a remarkable story for a 3-year-old. There is a very high degree of narrative competence, very much different from Ira's story. These two stories show that there is very wide variation within the group of 3-year-olds in how children describe the banana-scene. The same applies to the other age groups as well.

Now if we compare the stories of Ira (3;5) and Vera (3;10) to the story of Nadja (6;9), we realize that Vera's story is more similar to the story by Nadja, who is three years older, than to the one by Ira, who is five months younger. Let us have a closer look at Nadja's story (10).

(10) Nadja 6;9

*C: <i>prišla^p myška.</i>	'a mouse came.'
*C: <i>ona uvidela^p bol'šoj banan.</i>	'she saw a big banana.'
*C: <i>i stala^p ego očiščat[#].</i>	'and she started to clean it.'
*C: <i>kogda ona ego očiščalaⁱ, pojavljalsjaⁱ novyj banan.</i>	'while she was cleaning it, a new banana appeared.'
*C: <i>i so škurkoj ešče.</i>	'and with another peel.'
*C: <i>a potom ras+//</i>	'and then ...'
*C: <i>raskryla^p i ešče banančik malen'kij.</i>	'she opened (it) and another small banana.'
*C: <i>i tam bylⁱ banan bez škurki.</i>	'and there was a banana without peel.'
*C: <i>tam ležalⁱ slonjonok.</i>	'there the little elephant was lying.'
*C: <i>i prosnulsja^p.</i>	'and he woke up.'
*C: <i>on s"e^p banan.</i>	'he ate up the banana.'
*C: <i>a myška posmotrela^p i zagrustila^p.</i>	'and the mouse watched and became sad.'
*C: <i>i stala^p grustnoj.</i>	'and she became sad.'

Nadja's story is very clear, she introduces the protagonists, tells the events in their order and marks the switching of referents. The main difference to Vera's story is that she focuses more on the part where the mouse peels off several layers of the banana. This part was left out in Vera's story. The comparison of these stories confirms that there is indeed tremendous variation within and across age groups. This needs to be kept in mind in the analysis of other narratives.

5. Conclusions

The main result of this chapter is that children's use of Aktionsarten and aspect is context-specific. The comparison between the two production experiments of Levels 1 and 2 shows that the distribution of telic vs. durative Aktionsart verbs is by and large determined by the type of information suggested by the stimulus material. While

this is an effect of lexical coding conventions, the contextual difference also has an impact on the use of aspect within the telic Aktionsart, i.e., the one Aktionsart that consistently allows a free choice between perfective and imperfective aspect. In the Level 1 production experiment, i.e., in isolated utterances, the imperfective and perfective aspect were used nearly on an equal par, with only a slight preference for the perfective aspect. In the Level 2 experiment, in contrast, the perfective aspect was clearly dominant. The perfective aspect is used here in the function of foregrounding, stating events with a clear goal or result that advances the plot. Thus, children's use of aspectual forms corresponds to the generally recognized functions of aspect. Children seem to be sensitive to these functions in the Level 2 experiment from early on, and they apply these functions in correct response to contextual demands.

This suggests that children from age 3 onward are sensitive to the use of aspect in contexts with different discourse complexity. If Aktionsarten alone were the decisive factor, we would not find a difference in the use of aspect within the telic Aktionsart in the two experiments.

In the Level 1 experiment we did not find a difference in aspect use across different age groups. In the Level 2 experiment, in contrast, we found a correlation between age and the use of telic imperfectives. Only the older children used telic imperfectives. This is very much different from the findings of the Level 1 experiment, where children used telic imperfectives from early on and on an equal par with perfective telics. How can we interpret these findings?

The use in isolation directly corresponds to the statement-of-fact function of the imperfective (see Chapter 3). As the term suggests, imperfectives used in this function are used to state a fact, without, however, focusing on the result or goal of the fact, which is inherent in the semantics of the verb. This is the very same use as the perfective aspect, except that the perfective aspect highlights the boundary inherent in the semantics of the verb. In a narrative, the statement-of-fact function is rather marginal and if telic imperfectives are used, they tend to be used in the durative function, concentrating on the action itself, but keeping the goal or result of the action in focus. This is a cognitively more complex function than the statement-of-fact

function. This might be the reason why only the older children use telic imperfectives in the Level 2 experiment, whereas children of all tested age groups use telic imperfectives in the Level 1 experiment, with the statement-of-fact function. This suggests that we do not only have to look at the comprehension and production of specific aspectual forms, but we need to take into account the specific function in which these forms are used.

If we had only the results of the Level 2 experiment, we would have confirmed the strong correlation of perfective aspect with the telic Aktionsart found in many acquisition studies of other languages. This, however, would lead us to a misconception of the acquisition of Russian aspect, because we would have made a generalization of one narrative context to make a judgment about Russian aspect acquisition in general. This shows that we cannot rely on one level of discourse complexity alone in studying the acquisition of aspect.

Chapter 9: Complex Narratives (Level 3)

1. Introduction

In the last two chapters we saw that discourse complexity is an important factor in the use of aspect and Aktionsarten. The use of aspect and Aktionsarten differed on Level 1 and Level 2. Level 1 focused on the most elementary narrative, the description of a simple isolated event. In this experiment, the imperfective aspect was of particular importance. It was predominantly used in the statement-of-fact function. The experiment of Level 2 presented a more complex event, a short story with several actions. In the descriptions of these stories the advancement of the plot, expressed by the description of sequenced events, was taken by the children as the most important task of the narration. Thus, because the focus was on sequenced events, the perfective aspect was predominant. Backgrounding turned out to be of minor importance, even though backgrounding information was sometimes provided. Grounding was thus not as relevant as we might expect it to be in a more complex story.

In the Level 1 experiment, we found a different distribution of aspect than has been claimed in the literature. In experimental and longitudinal studies on a variety of languages a correlation between the telic Aktionsart and the perfective aspect has been found. But what we found in contrast was an approximately even distribution of the perfective and imperfective aspect within the telic Aktionsart. The results of the Level 2 experiment, however, showed again the typical correlation of perfective aspect and the telic Aktionsart. The results of these two experiments show that we need to specify the context we are talking about if we claim correlations. Generalizations across contexts are not necessarily warranted.

Further, we have seen that children are sensitive to different contexts from early on. To test the use of aspect on a more complex level, I introduced Level 3. As Berman and Slobin and colleagues (1994) have shown, narratives are an excellent

tool for tracking the interaction of cognitive development and linguistic development. As a stimulus for Level 3, I used a picture book without words, which tells an elaborate story with a clear plot and a continued alternation between foreground and background. In such a story the use of aspect becomes more subtle than on either Level 1 or 2.

The difference between the three narrative levels is both qualitative and quantitative; not only do the types of events differ, but also the number and relations of the events increase from level to level. Given the results of the production tasks of Level 1 and 2 (Chapter 7 and 8), we might expect to find still another distribution of aspect on Level 3.

A further factor that becomes important on Level 3 is tense. On Level 1 the different tense/aspect combinations were not an issue; no variation was found. On Level 2, the 2-year-olds showed an even distribution between present and past tense in the duratives; in all other age groups, the past tense was predominant. On Level 3 however, tense and its interrelation with aspect becomes even more relevant. Narratives are said to usually have one predominant tense, called "anchor tense". Berman and Slobin's (1994) cross-linguistic study of narratives has shown that anchor tense is an important criterion for a well-formed narrative. However, this does not hold for the narratives in this study. The role of tense in the Russian narratives will be analyzed in detail.

The chapter is structured in parallel to the two preceding chapters in order to facilitate a comparison: First, I describe the design and the procedure of the experiment. Second, I present the hypotheses about the use of aspect, Aktionsarten, and tense. Third, I compare the distribution of Aktionsart and aspect parallel to Levels 1 and 2. Fourth, I focus on the distribution of tense and the role of anchor tense which have been shown to be important for story telling. Fifth, I present conclusions, especially focussing on the comparison of the three levels of discourse complexity.

2. Design of the experiment and procedure

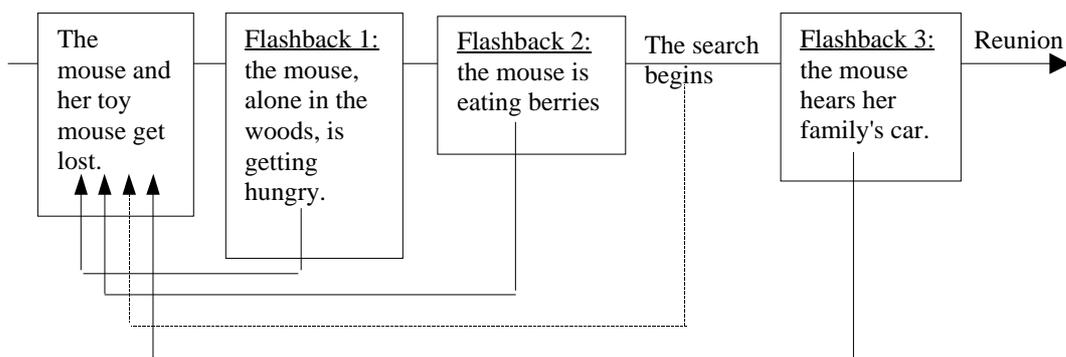
As a stimulus for the Level 3 experiment, I used a picture book without words called "Picnic" (by Emily Arnold McCully, Harper & Row 1984). The story, which features a mouse family as protagonists, goes as follows:

A family of mice pack their things on a truck in order to go for a picnic. They start driving. The road is very bumpy and at some point, one little mouse falls off the truck, together with its toy mouse. From this point onwards, the adventures of the two parties, i.e., the adventures of the little mouse with its toy mouse on the one hand, and the adventures of the rest of the family on the other hand, develop independently. No-one in the family realizes the loss of the little mouse, and they drive further. Finally, the family arrives at a picnic spot, and they start playing, bathing, and having fun. Scene switch: meanwhile, the little mouse is alone in the woods looking for food; it discovers wild berries. Scene switch: the family continues enjoying their excursion, and several different activities are going on at the same time, e.g. playing, swimming, ball games. Scene switch: the little mouse eats lots of berries and then lies down to rest. Scene switch: everybody in the family sits down to eat. At this point they realize that one mouse is missing, and they begin to search (with several simultaneous actions of different members of the family: shouting, searching, looking around, etc.), but without success. Finally, they pack up their things and drive back, shouting and looking for the little mouse. Scene switch: the mouse hears the car coming and runs out on the street, which leads to a happy reunion. Then, there is a repetition of the theme: the little mouse has forgotten its toy mouse in the woods. The mouse remembers it and runs back to get the toy mouse. Then the whole family starts over with their picnic.

There are several reasons why I chose this story. First, the story needed to have a clear plot, and it had to be comprehensible even to 3-year-olds. I chose a story in which the child periodically is reminded of the central issue of the plot, the loss of the mouse. These periodical reminders are necessary in order to make sure the story of the child is not influenced by memory problems. If this were not the case, it could very well be that the outcome would have nothing to do with the child's inability to tell a story, but would be due to the structure of the stimulus. The flashbacks provided

in this picture book are schematically presented in Figure 9.1. These flashbacks are interspersed with the pictures telling the story of the mouse family having their picnic.

Figure 9.1: Flashbacks in the story



Second, the story needed to have several layers of events with a complex foreground and background structure. Such a structure makes the use of the diverse aspectual functions at least likely. Third, the story had to be interesting enough to preschoolers to keep their attention. It had to have pleasing characters that capture the interest of the child.

As discussed in Chapter 6, it is generally preferable to use video as a stimulus instead of pictures. But not always. On the level of discourse complexity that I am interested in here, video stimuli have a drawback: the stories get too long and it puts too much burden on the memory of a preschooler to remember the video and narrate the story as a whole. Cutting up the video as I did in the Level 2 experiment would not have solved the problem, because the cut-off point would make it harder for the children to produce coherent narratives. As we saw in Chapter 8 in the experiment of Level 2, even the description of a short event was difficult for most of the children. These problems seem to outweigh the problems of picture books.

The study was conducted by the same two experimenters as the other experiments. The experimental procedure was the following: a native speaker of Russian told the child that s/he should look through the book. Again, like in the other experiments, the child was asked to tell the story to a toy lion in the form of a hand

puppet. Using a handpuppet proved to be especially useful in this experiment. In a pilot study, in which an adult had served as a listener, younger children performed very poorly. Especially the 3- and 4-year-olds saw no reason why they should tell a story to an adult (regardless of whether or not they knew that the adult did not know the story). Children of this age assume by default that the adult should tell the story to them and not the other way around. Hence, the motivation to help out the lion was crucial for this age group and this might be the reason why this study yielded, as we will see, some remarkable stories even from 3-year-olds. The story was then told by the child going through the picture book a second time. The child was reminded that s/he should tell the story of the book and not just describe the pictures. This was emphasized by the experimenter several times, if necessary, but of course we were not always successful.¹ To get the child into story-telling mood, the experimenter provided as a prompt the phrase *žili byli* 'once upon a time', which is the stereo-typical beginning of a fairy tale, and proved to be a successful prompt to get a story from the child rather than a mere description of the pictures. The experiment was conducted in several kindergartens of St. Petersburg with a total of 52 children (twelve 3-year-olds, fourteen 4-year-olds, fourteen 5-year-olds, thirteen 6-year-olds).

3. Hypotheses

First, as a result of the previous two experiments, I again expect the telic and durative Aktionsart to be the most frequent Aktionsarten used by children of all age groups. As already stated in Chapter 8, this is suggested not only by the results of the production experiments, but can probably be derived from the distribution of Aktionsarten in discourse in general. From a discourse point of view, these two Aktionsarten are the most important ones.

¹ This was especially important in Russian kindergartens, where picture books are used a lot by teachers and speech pathologists (present in every Russian kindergarten) to assess the vocabulary of the child. Thus, it was very important to make clear what we expected from the child.

Hypothesis 1:

The telic and durative Aktionsarten are the most frequent Aktionsarten used in all age groups.

Second, I expect that if a child tells a coherent story, rather than merely describing the pictures, s/he will use more telic verbs than duratives. Thus, I expect the younger children who merely describe what happened in the pictures without connecting the individual events to a coherent story, would use more duratives than telics. The description of mere actions is a cognitively simpler task than the inference from an action to its depicted result:

Hypothesis 2:

If a child tells a story, s/he will use more telic verbs than duratives.

Third, one would expect that telic verbs will be predominantly used in the perfective aspect, as a means of advancing the plot.

Hypothesis 3:

The telic Aktionsart correlates strongly with the perfective aspect.

As discussed in Chapters 4 and 5, perfectives are predominantly used to report the foreground, i.e., to advance the plot of a story. This is the most unmarked function of the perfective aspect in a narrative.

Fourth, I expect the narrators to choose a definite anchor tense. As shown in a cross-linguistic study on narratives (Berman and Slobin 1994), stories are usually told by adult native speakers either in the past or present tense with one of the two tenses serving as an anchor tense. The same can be expected for Russian:

Hypothesis 4:

Russian adults use an anchor tense in narrating the story.

Thus, I expect that the older the children get the more they use an anchor tense. This is summarized in Hypothesis 5.

Hypothesis 5:

There is a developmental curve in the use of an anchor tense.

The perfective aspect in Russian is predominantly used for advancing the plot of a story. Since a story is mainly about plot advancement, we can expect that the predominant aspect in a story is the perfective aspect. There is no present tense reading of Russian perfectives. Thus, I would expect that if an anchor tense is used it is the past tense that serves as the anchor tense in Russian stories.

Hypothesis 6:

The past tense is the preferred anchor tense in Russian narratives.

4. Results and Discussion

4.1 Distribution of Aktionsarten over age

In the production experiments of Level 1 and 2 the telic and durative Aktionsarten played the most prominent role, whereas the other Aktionsarten were clearly of minor importance.

Table 9.1 illustrates the distribution of Aktionsarten on Level 3:

Table 9.1: The distribution of Aktionsarten in the Level 3 experiment

Age	Telics	Duratives	Ingressives	Delimitatives	Semelfactives
3-year-olds, n=12	38%	49%	0%	0%	13%
4-year-olds, n=14	50%	36%	4%	1%	8%
5-year-olds, n=14	42%	43%	7%	1%	7%
6-year-olds, n=13	42%	38%	10%	0%	10%

As was the case in the production experiments of Levels 1 and 2, the telic and durative Aktionsarten are the most prevalent Aktionsarten. This is consistent with Hypothesis 1. In this experiment, semelfactives are the next frequent Aktionsarten, followed by ingessives. In the other two production experiments the semelfactive Aktionsart had not played any role. The reason why the semelfactive Aktionsart gains importance in the Level 3 experiment lies in verbs of motion like *pojti* 'go', which belong to the semelfactive Aktionsart. Verbs like these are relatively frequent in the narration of the mouse story. The mouse family changes its location quite often, e.g., to and from the picnic spot and at the picnic spot itself as well. Interestingly, as in the other two production experiments, the distribution of Aktionsarten hardly differs across age groups. This is true even though there is considerable variation within age groups.

The percentages indicated in Table 9.1 have to be taken with the same caveat as in the other two experiments: there is strong variation within age groups. This becomes not only apparent in the length of the stories and the linguistic means children choose to describe the events, but also in whether they tell a coherent story at all (measured by the use of core components as discussed below). Table 9.2 compares the distribution of telics and duratives in the three production experiments.

Table 9.2: Distribution of telics and duratives in the production experiments of Level 1, 2 and 3

Age	Level 1		Level 2		Level 3	
	Telics	Duratives	Telics	Duratives	Telics	Duratives
3-year-olds	40 %	57%	56%	37%	38%	49%
4-year-olds	42 %	54%	60%	40%	50%	36%
5-year-olds	44 %	51%	74%	18%	42%	43%
6-year-olds	44%	46%	64%	29%	42%	38%

The distribution of telics and duratives differs in the three experiments. On Level 1 the durative Aktionsart was preferred over the telic Aktionsart, except for the 6-year-olds, for whom the use of the durative and telic Aktionsarten was approximately even.

The results cannot fully be explained by the stimuli: 33% of the stimuli depicted purely durative actions; 17% showed actions with a clearly foreseeable qualitative result (without depicting the result itself); 30% showed telic actions with a depicted result, and 21% either had a short duration, a beginning, or were punctual. Thus, if the results were predictable by the stimuli we would get a different result, i.e., on average only 33% of duratives. The rest of the scenes should be described with a non-durative verb. This is different from the results we get (cf. Table 9.2). Thus, the stimuli, can be only part of the reason why duratives are predominant.

Further, in Chapter 8 we found that the imperfective aspect plays a much more salient role on Level 1 than on Level 2. Also, within the telic Aktionsart the imperfective aspect was very strong. This suggests that the imperfective aspect is the preferred aspect in reporting on a single event (Level 1). Since the durative Aktionsart is the most unmarked Aktionsart for the imperfective aspect (cf. Chapter 5), it might also be that this is the reason why children prefer duratives in this experiment.

The experiment of Level 2 triggered a strong preference for the telic Aktionsart. The telic Aktionsart was dominant in all age groups. This might be due to the fact that on Level 2 children focused exclusively on the narration of the plot, i.e., on its foreground. Backgrounding was of minor importance, and accordingly, durative verbs were used less frequently. Also, most of the actions acted out by the two protagonists had a clear goal, and this too pushed up the frequency of telic Aktionsart verbs.

The Level 3 experiment, which is the most complex task, features the most complicated narrative level of this study. An intricate foregrounding and backgrounding structure gained importance as illustrated in (1) and (2), which are parts of the stories told by the children.

(1) Inna 6;3

- | | |
|---|---|
| *C: <i>i myšonok pošel^P-pošel^P.</i> | 'and the little mouse went-went.' |
| *C: <i>posmotre^P, čto dal'se byloⁱ.</i> | 'looked, to see what was ahead of him.' |
| *C: <i>i uvida^P bol'sie kusty.</i> | 'and he saw big bushes'. |
| *C: <i>a drugie myški kušajutⁱ obed.</i> | 'and the other mice are eating lunch'. |

- *C: *odin smotriťⁱ, poka oni kušaliⁱ obed.* 'one is watching while they ate lunch.'
 *C: *étot myšonok, kotoryj upal^p s mašiny, stal^p smotretⁱ.* 'this little mouse, which has fallen out of the car started looking around.'

(2) Nastja 6;4

- *C: *potom oni **priexali^p** na piknik.* 'then they arrived for the picnic.'
 *C: *myšata **pobežali^p** na poljanku.* 'the baby mice ran onto the field'.
 *C: *éto.*
 *C: *a vzroslye **rasstitali^p** polotence.* 'and the adults spread out the towel.'
 *C: *i myšata éto prygaliⁱ.* 'and the baby mice were jumping around.'
 *C: *vzroslye sideliⁱ na+// na kanistre [=?].* 'the adults were sitting on a container [?].'
 *C: *a deti igraliⁱ.* 'and the children played.'
 *C: *a myšonok, kotoryj **poterjalsja^p**, on **ostalsja^p** tam i sidelⁱ na dereve.* 'and the little mouse that had gotten lost, he stayed there and was sitting on a tree.'
 *C: *potom myšonok **pošeť^p** na poljanu, gde očen'-očen' mnogo byloⁱ rastenija.* 'then the little mouse went out onto the field, where there were very-very many plants.'
 *C: *potom odin myšonok **upal^p** v vodu.* 'then one little mouse fell into the water.'

In contrast to the Level 2 experiment more children divided their story into foreground and background. Such a structuring, however, presupposes some advanced story-telling capabilities and is found mainly in the older children. The foreground is expressed with perfective verbs (boldfaced in (1) and (2)) and the background is mostly expressed by duratives, i.e., imperfective verbs, e.g., *sideli na kanistre* 'they were sitting on a container', *a deti igrali* 'and the children were playing'.

Further, several of the pictures depicted simultaneous actions, especially the pictures of the picnic ground were full of simultaneous actions: swimming, ball games, singing, playing the guitar, running etc. This was reflected in the children's narratives in the use of imperfective, mainly durative verbs. An example is (3):

(3) Dima 5;4

- *C: *oni uvideli^p barabana.* 'they saw a drum.'
 *C: *a drugaja padaetⁱ.* 'and the other one is falling down.'
 *C: *i vot ona guljaetⁱ tut.* 'and here she is walking here.'
 *C: *vot ona guljaetⁱ.* 'and there she is walking.'
 *C: *a drugie veseljatsjaⁱ.* 'and the others are enjoying themselves.'
 *C: *i kušajutⁱ.* 'and they are eating.'
 *C: *a drugaja kupaetsjaⁱ.* 'and the other one is swimming.'
 *C: *a vot oni guljajutⁱ.* 'and here they are walking.'

The stimulus material of Level 3 lends itself more to the use of duratives than the stimulus material of Level 2, which focused more on a straightforward plot without many side actions going on in the background.

Let us have a look at the distribution of Aktionsarten. In the Level 3 task the behavior of the different age groups is not homogeneous. 3-year-olds preferred the durative Aktionsart over the telic Aktionsart (cf. 49% duratives vs. 38% telics). 5-year-olds used telics and duratives evenly. In all other age groups, the telic Aktionsart was slightly preferred.

The preference of the 3-year-olds for duratives might be due to the fact that the children predominantly described the pictures independently of each other, rather than telling a coherent story. This preference is illustrated by a story of a 3-year-old which looks as follows:

(4) Kristina 3;6

- *C: *a vot zdes' vse poexali^p.* 'and here they all set off off.'
 *C: *upali^p oni.* 'they fell down.'
 *C: *da.* 'yes'.
 *C: *a vse uexali^p!* 'and they all drove away.'
 *C: *a kuda oni uexali^p?* 'and where did they drive away to?'
 *C: *domoj?* 'home?'
 *C: *upala^p.* 'she fell down.'
 *C: *a zdes' idutⁱ guljajutⁱ.* 'and here they are going for a walk.'
 *C: *a vot zdes' čto takoe?* 'and what's going on over here?'
 *C: *a vot zdes' myški vse guljajutⁱ.* 'and over here all mice are walking.'
 *C: *i vot zdes'.* 'and over here.'
 *C: *malen'kim nado idti kušat' domoj.* 'the small ones need to go home to eat.'

*C: <i>zdes' tože iduť domoj.</i>	'here they also go home.'
*C: <i>a vot étot zdes' kušajut'.</i>	'and here they are eating.'
*C: <i>a vot zdes' guljajut'.</i>	'and here they are walking.'
*C: <i>i vot zdes' kušajut'.</i>	'and here they are eating.'
*C: <i>zdes' ix mnogo.</i>	'here are many of them.'
*C: <i>i vot zdes' guljajut'.</i>	'and that is here they are walking.'
*C: <i>i vot zdes'.</i>	'and here'.
*C: <i>zdes' eduť na mašine.</i>	'here they are riding in a car.'
*C: <i>zdes' na mašine eduť.</i>	'here they are riding in a car.'
*C: <i>zdes' mama-myška ostalas^p.</i>	'here the mother mouse was left behind/stayed behind.'
*C: <i>odna myška ostalas^p.</i>	'one mouse was left.'
*C: <i>a vot zdes' leto.</i>	'and here it's summer.'
*C: <i>a zdes' myška stoit'.</i>	'and here the mouse is standing.'
*C: <i>a vot zdes' tože stoit'.</i>	'and here it is also standing.'
*C: <i>a zdes', zdes' na stole ona stoit'.</i>	'and here, here she is standing on a table.'

To test Hypothesis 2, which states that there is a correlation between story telling and the use of the telic Aktionsart, we need to have an operational criterion for what counts as a story. Usually, a story consists of a beginning, an elaboration of the plot in the middle and then as an end, the resolution of the plot. Following Berman and Slobin (1994), I determined three core components of the story:

1. The loss of the mouse.
2. The realization of the loss and the search.
3. The reunion of the family.

In order to tell the complete story, the child would need to mention all three components. An example in which a child mentions all three components is shown in the following story of a 6-year-old:

(5) Dima 5;4

*C: <i>oni po+</i>	'they'
*C: <i>oni poexali^p na kanikuly guljat'.</i>	'they went on a trip to take a walk.'
*C: <i>odna dumaet'.</i>	'one is thinking.'

- *C: *mašina tak razognalas^p, čto vot peredenee očēn' vysoko.* 'the car did speed up so much that here the front is very high.'
- *C: *odin iz nix myšonok vypal^p i poter'alsja^p po doroge.* 'one of the mice fell out and got lost on the way.' [Core component 1]
- *C: *oni ego počti čto ne zametil^p.* 'they hardly noticed him.'
- *C: *potom oni ego zametil^p.* 'then they noticed him.'
- *C: *no kogda oni ležaliⁱ na dorožke, s nim bylaⁱ ego malen'kaja igruška.* 'but when they were lying on the road, he had his little toy with him.'
- *C: *a ego bratcy uexali^p.* 'but his brothers drove away.'
- *C: *a potom, kogda oni našli^p podxodjaščee mesto, oni vyšli^p i ego načal^p iskatⁿ.* 'and then, when they found an appropriate place, they went out and started to look for him.' [Core component 2]
- *C: *gde on?* 'where is he?'
- *C: *gde?* 'where.'
- *C: *i tut, kto gde iščetⁱ.* 'everybody looks some place.'
- *C: *drugoj s ne+* 'the other one with ...'
- *C: *slepoj pošel^p.* 'a blind person came.'
- *C: *s paločkoy iskalⁱ.* 'he looked with his stick.'
- *C: *kto kogo posylalⁱ iskatⁿ.* 'somebody sent somebody to search.'
- *C: *a myšonok tot, kotoryj poterjalsja^p, sidelⁱ na dorožke i grustilⁱ.* 'and the little mouse, which had gotten lost, was sitting on the road and was sad.'
- *C: *a oni.* 'and they.'
- *C: *ka+*
- *C: *kto čto delaetⁱ.* 'everybody is doing something.'
- *C: *kto siditⁱ na stole.* 'one is sitting on the table.'
- *C: *vse delaetⁱ.* 'he is doing all kinds of things.'
- *C: *kto katiť šinu.* 'one is rolling a tire.'
- *C: *kto igraetⁱ.* 'one is playing.'
- *C: *kto zanimaetsjaⁱ.* 'one is studying.'
- *C: *potom myšonok vdrug uvide^p cvety.* 'and then the little mouse suddenly saw flowers.'
- *C: *i pošel^p ix sryvat'.* 'and he went to pick them.'
- *C: *a oni tut kak raz ustroili^p prazdnik.* 'and there they prepared a party.'
- *C: *na stol vse nakryli^p.* 'they set everything on the table.'
- *C: *i myšonok nabral^p cvetochkov i načal^p ix njuxatⁿ.* 'and the little mouse collected flowers and started to sniff at them.'
- *C: *a oni sideliⁱ i prodolžaliⁱ besedu.* 'and they were sitting and they were continuing their talk.'
- *C: *i eliⁱ.* 'and they were eating.'
- *C: *kto gde iščetⁱ.* 'one is looking someplace.'
- *C: *kto plačetⁱ.* 'one was crying.'
- *C: *vot.* 'so'.

*C: <i>odin myšonok pozval^p ljagušku na pomoščⁱ.</i>	'one little mouse called the frog for help.'
*C: <i>drugoj sdela^p korablik.</i>	'another one made a little boat.'
*C: <i>korablika posla^p [+].</i>	'he sent off a boat.'
*C: <i>a on ležalⁱ na trave kak raz.</i>	'and he was lying on the grass at the time.'
*C: <i>kto na avtomobile iskalⁱ ego.</i>	'someone looked for him by car.'
*C: <i>a on vse iščetⁱ i iščetⁱ.</i>	'and he keeps looking and looking.'
*C: <i>i vdrug oni uvidel^p ix myšonka.</i>	'and suddenly they noticed their little mouse'.
*C: <i>i ostanovilis^p.</i>	'they stopped.'
*C: <i>vot oni ego našl^p.</i>	'here they found him.' [core component 3]
*C: <i>on pribežal^p za svoej igruškoj.</i>	'he ran to get is toy.'
*C: <i>vzjal^p ego.</i>	'he got it.'
*C: <i>ee.</i>	'her (corrects gender of pronoun).'
*C: <i>oni srazu načal^p ego vsego obnimatⁱ.</i>	'they immediately started to hug him all over.'
*C: <i>éto.</i>	'so (pause filler).'
*C: <i>potom oni opjat^p stal^p estⁱ.</i>	'then again they started to eat.'

Even though the child got confused at the beginning when he told that the mouse family noticed the little mouse falling out of the truck, he mentioned all three core components and told an elaborate and linguistically sophisticated story.

However, since the plot was rather elaborate, children could tell a significantly long and coherent narrative by mentioning only two components. Thus, for present purposes, it was sufficient that the child mentioned two core components. A coherent narrative in which the child mentions only two core components is given in (6).

(6) Dima 5;4 (different child from (5))

*C: <i>odna myška spustilas^p.</i>	'one mouse got down.'
*C: <i>a drugie idutⁱ v mašinu vmeste s xvostami [= ?].</i>	'and the others go into the car together with their tails.'
*C: <i>a drugie edutⁱ.</i>	'and the others are driving.'
*C: <i>vot.</i>	'well.'
*C: <i>i čutⁱ ne upal^p.</i>	'they nearly fell.'
*C: <i>a drugaja myška so svoim myškoj-igruškoj.</i>	'and the other mouse with his toy mouse.'
*C: <i>potomu čto mašina pod+//</i>	'because the car.'

*C: <i>vot.</i>	'well.'
*C: <i>skaknula^p.</i>	'bounced.'
*C: <i>i ležatⁱ oni vmeste.</i>	'and they are lying together.'
*C: <i>mašina daleko-daleko uže uexala^p.</i>	'the car has already driven way far away.' [core component 1]
*C: <i>po do+//</i>	
*C: <i>po doroge dve myški.</i>	'on the way are two mice.'
*C: <i>na doroge ležatⁱ i myšonok [=?].</i>	'they 're lying on the road. And the mouse.'
*C: <i>vse s soboj zaxvatili^p.</i>	'they have taken everything with them.'
*C: <i>odna xočetⁱ kupat'sja.</i>	'one of them wants to go swimming.'
*C: <i>drugie ustroivajutⁱ [+] prazdnik.</i>	'others are preparing a party.'
*C: <i>i drugie pljašutⁱ.</i>	'and others are dancing.'
*C: <i>nu a bednaja myška siditⁱ na doroge.</i>	'but, the poor mouse is sitting on the road.'
*C: <i>i oni vmeste s myšonkom.</i>	'together with the mouse' [toy mouse – SS]
*C: <i>oni vmeste smotrjatⁱ.</i>	'they are looking together.'
*C: <i>oni uvideli^p barabana.</i>	'they saw a drum.'
*C: <i>a drugaja padaetⁱ.</i>	'and another one is falling.'
*C: <i>i vot ona guljaetⁱ tut.</i>	'and here she is walking here.'
*C: <i>vot ona guljaetⁱ.</i>	'there she is walking.'
*C: <i>a drugie veseljatsjaⁱ.</i>	'and others are having fun.'
*C: <i>i kušajutⁱ.</i>	'and they are eating.'
*C: <i>a drugaja kupaetsjaⁱ.</i>	'and another one is taking a bath.'
*C: <i>a vot oni guljajutⁱ.</i>	'and there they are strolling.'
*C: <i>a vot oni kušajutⁱ.</i>	'and there they are eating.'
*C: <i>a drugie v raznye storony smotrjatⁱ.</i>	'and others are looking in different directions.'
*C: <i>drugie utešajutⁱ ee.</i>	'the others are comforting her.'
*C: <i>a drugaja poranilas^p i plačetⁱ.</i>	'and another one hurt herself and is crying.'
*C: <i>a drugaja xočetⁱ okunut'sja^p.</i>	'and another one wants to plunge.'
*C: <i>a drugaja smotritⁱ na éto.</i>	'and another one looks at that.'
*C: <i>a drugaja smotritⁱ na étot.</i>	'and another one looks at that.'
*C: <i>drugaja otvernulas^p.</i>	'another one turned away.'
*C: <i>drugaja povernulas^p.</i>	'another turned.'
*C: <i>ona utešaetⁱ.</i>	'she is comforting.'
*C: <i>a drugaja myšⁱ smotritⁱ iz kamnja.</i>	'and the other mouse looks out of a stone.'
*C: <i>vot oni idutⁱ k mašine.</i>	'there they go to the car.'
*C: <i>a tam vidjatⁱ zagoraetⁱ v travke.</i>	'and there they see she is lying in the sun in the grass.'

*C: <i>oni.</i>	'they'
*C: <i>oni ešče rešili^p, čto.</i>	'they further decided that...'
*C: <i>edut-edutⁱ i vdrug oni vstretit^p myšku.</i>	'they drive and drive and suddenly they met the mouse.'
*C: <i>kotoraja upala^p.</i>	'who fell down'.
	[core component 3]
*C: <i>i s [=? bez] igruškoj ee.</i>	'and with [without?] her toy.'
*C: <i>tak im stalo^p veselo na drugie mašiny.</i>	'so they became happy on the other car.'
*C: <i>i togda ona svoju myšku obnjala^p i ne+//</i>	'and then she hugged her mouse and ..."
*C: <i>dostala^p etu myšku.</i>	'she took this mouse.'
*C: <i>i oni kušaliⁱ.</i>	'and they were eating.'
*C: <i>a mašina stoitⁱ.</i>	'and the car is standing.'

Even though Dima (5;4) does not mention core component 2, he still tells a coherent story. He even mentions core component 3, which presupposes that he had kept the main plot expressed by core component 1 (the loss of the mouse). Even if a child mentions only component 1 and component 2, a significantly long and coherent story is told.

Table 9.3 illustrates the mentioning of the core components across age groups.

Table 9.3: Percentage of children mentioning at least 2 core components (operational criterion for story telling)

Age	Children telling a story
3-year-olds	17% (2/12)
4-year-olds	21% (3/14)
5-year-olds	86% (12/14)
6-year-olds	100% (12/12)

We can observe as a clear trend that the older the children get the more children mention at least 2 core components. All 6-year-olds mention at least 2 core components and 86% of the 5-year-olds do this as well. There is a clear development over age with a wide gap between the 3 and 4-year-olds to the 5-year-olds. Only 17% of the 3-year-olds and 21% of the 4-year-olds mention at least two core components. In all

86% of the 5-year-olds and all 6-year-olds mention at least 2 core components. The strong development over age is confirmed by the Spearman correlation coefficient ($r=.6338$, $p=.000$).

Figure 9.2 offers a more detailed analysis on the distribution of core components across age groups.

Figure 9.2: The distribution of core components across age.

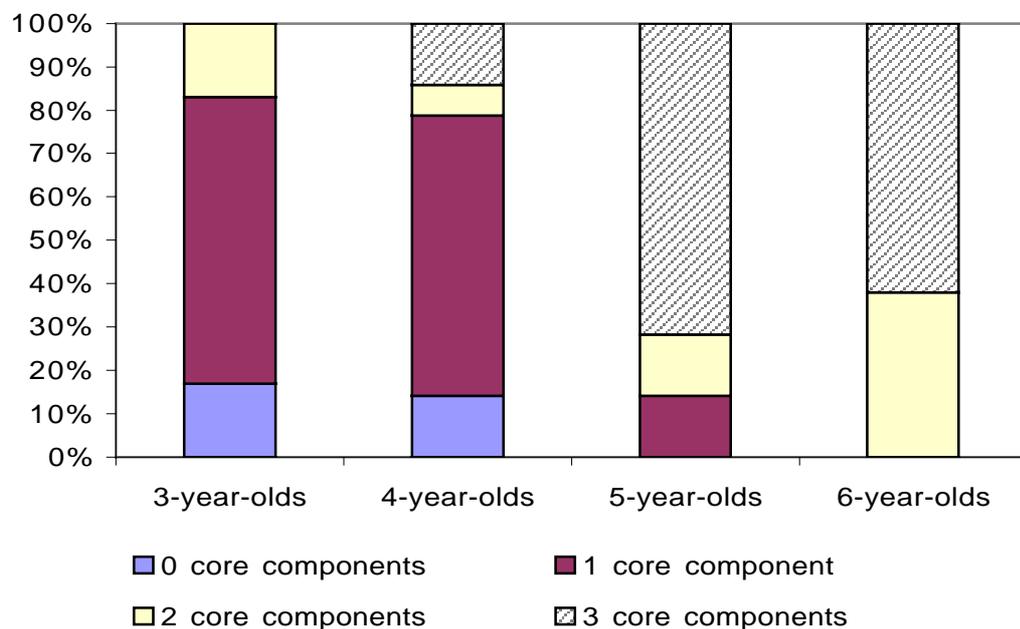


Figure 9.2 shows that the only children who did not mention any core component are among the 3-4 year-olds. The number of children who mention only one core component decreases over age down to 14% in the 5-year-olds, and none of the six-year-olds mentions only one core components. By contrast, the number of children mentioning either two or three core components increases over age. It seems that more 5-year-olds than 6-year-olds mention all three core components and thus they seem to be more proficient in story-telling than the 6-year-olds. However, all 6-year-olds who mentioned only two core components in fact mentioned component 1 and 3. This shows that they clearly understood the story. To mention the reunion of the

family (core component 3) means that they had had to keep the plot – i.e., the loss of the mouse – in mind while telling the story.

To test our Hypothesis 2, i.e., that the number of telics correlates with story telling (measured by the mentioning of at least two core components), I used the Spearman correlation coefficient. It turned out that there is no significant correlation between story telling and the use of telics ($r=-.0451$, $p=.749$). Thus, independently of how children solved the task, they primarily used telics. This result clearly falsifies Hypothesis 2, which proposed a correlation between story telling and the use of telics. Independent of whether children told a story or not they predominantly used telics.

But this corresponds to the observation made above that the telic and the durative Aktionsarten together are the most frequent Aktionsarten in general, i.e., independent of context and in fact independent of the level of discourse complexity as shown by the experiments in Chapter 7 and 8 and the frequency analysis of Forsyth (1972) as presented in Chapter 3. As we have seen in the comprehension experiment, the telic Aktionsart was best understood starting with the youngest age group tested, the 2-year-olds.

4.2 Distribution of aspect over age

4.2.1 General distribution of aspect

In the previous two chapters we have learned that the general distribution of aspect depends to a large extent on the distribution of Aktionsarten. Since all Aktionsarten except for the telic Aktionsart are predetermined for aspect, the general distribution will depend directly on the number of non-telic Aktionsarten used by the children. Table 9.5 compares the general distribution of aspect on Level 3 to what was found in the experiments of Level 1 and 2.

Table 9.5: Mean percentages of perfectives and imperfectives used in the production experiments of Level 1, 2 and 3.

Age	Level 1		Level 2		Level 3	
	Imperf.	Perf.	Imperf.	Perf.	Imperf.	Perf.
3-year-olds	73%	27%	41%	59%	54%	46%
4-year-olds	71%	29%	41%	59%	45%	55%
5-year-olds	68%	32%	26%	74%	49%	51%
6-year-olds	63%	37%	40%	60%	43%	57%

On Level 1, across all age groups, there was a strong preference for the imperfective aspect. This trend was strongest in the 3-year-olds and weakest in the 6-year-olds. The percentages seem to indicate that the use of imperfectives is decreasing over age. However, this is not significant at an α -level of .05 ($r = .1996$, $p = .152$).

On Level 2, the distribution of perfectives and imperfectives was reversed, with a preference of the perfective aspect across all age groups. On Level 3, there is nearly an even distribution of perfectives and imperfectives. The 3-year-olds showed a preference for the durative Aktionsart and this is reflected in their use of imperfective forms. The children of the other age groups showed a slight preference of the perfective aspect, but this preference is not as pronounced as the preferences in the other two experiments. Thus, depending on the level of discourse complexity, the distribution of aspect differs. This shows clearly that children of all age groups use aspect in a context-dependent way.

It is a striking fact that in none of the production experiments there is a development over age. On first sight, the absence of development in all three production experiments would suggest that aspect has been acquired from early on. But this is immediately contradicted by the comprehension data. The question then arises what it exactly means that aspect has been acquired. If it were enough that the forms are present, we could indeed claim that aspect is fully developed, at least from age 3 onward. This, however, would be a rather impoverished view of language acquisition. To speak about acquisition, we need not only to show that the forms are used in an

equal manner across age groups, but we need to show that children of different age groups also express the same meanings with these forms, i.e., whether children attribute the same functions to these forms. This requires a more fine-grained analysis.

In the following, I compare the use of the imperfective aspect across age groups. 3-year-olds, for instance, use the imperfective aspect to describe isolated actions or events, as exemplified by (7)

(7) Nastja 3;10

*C: <i>myška zaxoditⁱ v dom.</i>	'the little mouse goes into the house.'
*C: <i>a eti na mašinu.</i>	'and those onto the car.' (and there they are (getting) onto the car)
*C: <i>a éto uže edutⁱ.</i>	'and this they already drive.' (and here they are already driving)
*C: <i>a eti von kak katajutsjaⁱ naverxu.</i>	'and those over there how they drive up.' (and bouncing around)
*C: <i>djadja ne smotritⁱ, kuda edetⁱ.</i>	'the uncle doesn't look where he is driving to.'
*C: <i>i vot naverxu polučilos^p.</i>	'and so it happened up.' (so the car bounced up)
*C: <i>a éto oni vot tak.</i>	'so they go like this (probably gestures).'
*C: <i>veter ix nesetⁱ.</i>	'the wind carries them.'
*C: <i>oni vot tak delaju^t.</i>	'they do it like that.'
*C: <i>letjatⁱ</i>	'they are flying.'

Nastja (3;10) uses mostly duratives to describe isolated pictures, without establishing any obvious connection between them. For a listener it is impossible to follow her story without looking at the pictures she is describing. Nastja's story can hardly be called a narrative. She does not introduce or refer to the referents. There is no established time line. No connection is made between the pictures. This is a typical example of a story of a 3-year-old. The same patterns have been found by Berman and Slobin and colleagues (1994). Most of the 3-year-olds do not recognize or at least do not tell the plot of the story, and thus they do not switch between foreground and background. As a result the imperfective aspect is not used for backgrounding.

The backgrounding function of the imperfective aspect is found in some of the 5- and 6-year old stories, e.g. Ksjusha's (6;3).

(8) Ksjusha 6;3

- | | |
|---|--|
| *C: <i>vse myški sobirajutsjaⁱ exatⁱ.</i> | 'all the mice are getting ready to go.' |
| *C: <i>a odin myšonok ešče vyxoditⁱ iz doma.</i> | 'and one little mouse still comes out of the house.' |
| *C: <i>potom oni vsej sem'ej poexal^p.</i> | 'then the whole family set off.' |
| *C: <i>a kogda oni čerez kamni proexal^p, odin myšonok vypal^p.</i> | 'and when they drove over stones one little mouse fell out.' |
| *C: <i>i ostalsja^p na doroge.</i> | 'and he was left on the way.' |
| *C: <i>a vse ostal'nye poexal^p myši.</i> | 'and all other mice drove further.' |
| *C: <i>oni pošl^p sobirat' korzinku.</i> | 'they went to get the basket.' |
| *C: <i>a dva myšonka uže vybegajutⁱ.</i> | 'and two mice are already getting out.' |
| *C: <i>drugie myšata kupajutsjaⁱ.</i> | 'and the other mice are swimming.' |
| *C: <i>odin ne razgovarivaetⁱ.</i> | 'one doesn't talk.' |
| *C: <i>odin myšonok sobiraeⁱ cvetočki.</i> | 'one little mouse collects flowers.' |
| *C: <i>a drugie myšata idutⁱ na rabotu.</i> | 'and the other mice go to work.' |
| *C: <i>vse igrajutⁱ.</i> | 'everybody is playing.' |
| *C: <i>oni kušajutⁱ.</i> | 'they are eating.' |
| *C: <i>odin myšonok ostalsja^p na doroge.</i> | 'one little mouse was left on the road.' |
| *C: <i>svoju beluju myšku.</i> | 'his white mouse.' |
| *C: <i>i iščetⁱ ee.</i> | 'and he is looking for it.' |
| *C: <i>iščetⁱ vezde.</i> | 'he is looking everywhere.' |
| *C: <i>i zaxote^p poest' malinu.</i> | 'and he wanted to eat raspberries.' |
| *C: <i>vse igrajutⁱ xxx.</i> | 'everybody is playing.' |
| *C: <i>bulyxajutsjaⁱ v vodu.</i> | 'they plop into the water.' |
| *C: <i>odin fotografiruetⁱ.</i> | 'one is taking pictures.' |
| *C: <i>odni edjatⁱ myški.</i> | 'some mice are eating.' |
| *C: <i>myšonok vzja^p maliny.</i> | 'the little mouse took the raspberries.' |
| *C: <i>brosil^p svoju igrušku.</i> | 'he dropped his toy.' |
| *C: <i>i stal est^p malinu.</i> | 'and he started to eat raspberries.' |
| *C: <i>oni vse pokušal^p.</i> | 'they all have eaten.' |
| *C: <i>a odnogo myšonka netu.</i> | 'but one little mouse is missing.' |
| *C: <i>stal^p ego iskatⁱ vezde.</i> | 'they started to look for him everywhere.' |
| *C: <i>sobralis^p exat'.</i> | 'they got ready to leave.' |
| *C: <i>a étot myšonok, kotoryj tut v malinke, ulegsja^p v travke.</i> | 'and the mouse that was in the raspberry patch lay down in the grass.' |

*C: <i>a myšata edutⁱ i ego zovutⁱ.</i>	'and the little mice are riding, and they are calling him.'
*C: <i>drugo^j myšonok pri+priskakal^P.</i>	'another little mouse comes jumping up.'
*C: <i>edutⁱ oni.</i>	'they are driving'.
*C: <i>xxx priskakal^P.</i>	'he jumped by.'
*C: <i>a potom vzjal^P svoju myšku.</i>	'and then he took his mouse [doll].'
*C: <i>i oni stal^P kušat^P opjatⁱ.</i>	'and they started to eat again.'

Ksjuša (6;3) uses the perfective aspect in the past tense to advance the plot (marked in bold face) and to switch between the two stories that proceed simultaneously but independently (the actions going on at the picnic ground vs. the adventures of the little mouse who is alone in the woods). The perfective verbs mark the story line and guide the listener through the narrative. The imperfective verbs in the present tense are used for the background or the elaboration of the story line. Interestingly, Ksjuša uses exclusively the present tense for backgrounding. This fits with the observations made in many other languages that the perfective aspect and the past tense and the imperfective aspect and the present tense correlate with each other respectively. The regular distribution of aspect gives the story a clear structure and makes it easy for the listener to follow the story line. The imperfective aspect in this story clearly has a different function than the imperfective verbs in Nastja's (3;10) 'story'.

Thus, if we looked exclusively at the distribution of aspectual forms, without analyzing the functions attributed to these forms, we would not have detected any significant differences across age groups. Potentially, we could draw misleading generalizations about the use of aspect. The more fine-grained, qualitative analysis shows that aspect is not acquired right from the beginning of language acquisition.

This also shows that the contradiction between the results from the production experiment and the comprehension experiment are more apparent than real. The comprehension experiment (Chapter 6) unambiguously demonstrated that aspect competence develops over time and that 3-year-olds do not master aspect yet. The fine-grained analysis of the production data of Level 3 confirms this: although 3-year-

olds use aspectually marked forms, they do not maintain all the functions of these forms. I will return to this in Chapter 10.

4.2.2 Distribution of aspect within the telic Aktionsart

Table 9.6 compares the distribution of aspect within the telic Aktionsart in the three experiments and allows us to test Hypothesis 3.

Table 9.6: The distribution of aspect within the telic Aktionsart

Age	Level 1		Level 2		Level 3	
	Imperf.	Perf.	Imperf.	Perf.	Imperf.	Perf.
3-year-olds	45%	55%	9%	91%	13%	87%
4-year-olds	42%	58%	2%	98%	19%	81%
5-year-olds	46%	54%	10%	90%	14%	86%
6-year-olds	46%	54%	16%	84%	17%	83%

The Level 1 production experiment showed an approximately even distribution of perfective and imperfectives with a slight preference for perfectives within the telic Aktionsart. In the other two experiments, which included more complex narrative structures, the perfective aspect was clearly preferred. Thus, there is a different distribution of aspect within the telic Aktionsart across the three experiments. This is an important finding, because it shows that Aktionsarten and aspect use is relative to discourse complexity. Thus, these findings confirm the *Hypothesis of relativity of aspect and Aktionsart* (cf. Introduction).

Furthermore, aspect was used in different functions in the three experiments. The perfective and the imperfective aspect in the Level 1 experiment were mostly used for stating facts. In the experiment of Level 2, the perfective aspect was used for advancing the plot by describing sequenced events. The imperfective aspect was of minor importance and used mostly for backgrounding. In the Level 3 experiment, the functions of aspect were dependent on age and narrative capabilities of the child. The younger children used the perfective aspect to state facts and the imperfective aspect to either describe actions or state facts, without embedding them in a narrative. The

older children who had more mature narrative competence used the perfective aspect mainly for foregrounding and the imperfective aspect for backgrounding.

From early on, i.e. at least from age 3 onward, children use Aktionsarten and aspect in a context-specific way, i.e., they are partly sensitive to the context-specific distributions of aspectual functions. For instance, from age 3 onward we find all forms of aspect, including telic imperfectives in the past tense, which are not only morphologically and semantically marked, but also pragmatically marked in many contexts (cf. Chapter 5). Telic imperfectives in the past tense, are not equally likely to be found in all contexts. They have a very specific usage, and, as we saw in Chapter 5, they are highly marked. Younger children often are very strict about these contexts, as shown by the following story of a 3-year-old. Past imperfectives are boldfaced.

(9) Jaša 3;5

*C: <i>a sejčas.</i>	'and now.'
*C: <i>eto mne rasskazyvatⁱ vse?</i>	'shall I tell everything?'
*C: <i>letnjuju [skazku].</i>	'a summer one [fairy tale].'
*C: <i>ěto oni kušajutⁱ.</i>	'they are eating.'
*C: <i>ěto oni v mašinu zabirajutsjaⁱ.</i>	'they are gathering into the car.'
*C: <i>ěto u nix domik.</i>	'this is their house.'
*C: <i>ěto oni v mašinke edutⁱ.</i>	'they are riding in the car.'
*C: <i>tut tože v mašinke edutⁱ.</i>	'here they also riding in the car.'
*C: <i>i ěto v mašinke edutⁱ.</i>	'and they ride in the car.'
*C: <i>ěto v mašinke.</i>	'in the car.'
*C: <i>ěto ma+//</i>	
*C: <i>gonočnaja mašina.</i>	'a racing car.'
*C: <i>myška.</i>	'a mouse.'
*C: <i>tr-r-r.</i>	'trrr'
*C: <i>a ěto oni ne uexala^p.</i>	'and they [she] did not drive off.'
*C: <i>by-zh-zh.</i>	
*C: <i>a ona.</i>	'and she.'
*C: <i>a oni ne uspeli^p.</i>	'and they did not manage in time.'
*C: <i>myški.</i>	'the mice.'
*C: <i>aj!</i>	
*C: <i>ěto mašinki oni vylezajutⁱ.</i>	'they crawl out of the little car.'
*C: <i>net!</i>	'no'
*C: <i>ěto oni slezajutⁱ s mašinki.</i>	'they get down from the little car.'
*C: <i>tak.</i>	'so.'
*C: <i>a ěto.</i>	'and this.'

- *C: *éto prosto derevo.* 'this is only a tree.'
- *C: *vot tut ono.* 'there here it is.'
- *C: *éto oni begajut' po ulice, po ulice, po ulice, po ulice.* 'they are running on the street, on the street, on the street, on the street.'
- *C: *my snačala zimnjuju čitali'.* 'first we read a winter [story].'
- *C: *tol'ko čto rasskazovali'.* 'we just told it.'
- *C: *tak.* 'so.'
- *C: *éto oni myški begajut' po ulice!* 'they the mice are running on the street,
- *C: *begajut' po ulice, begajut' po ulice [= naslaždaetsja ritmom, skandiruet].* 'they are running on the street [enjoying the rhythm]'
- *C: *tak.* 'so.'
- *C: *éto oni uže na ulice sidjat' s malen'koj myškoj.* 'they are already sitting on the street with the little mouse.'
- *C: *tak my ešče.* 'so we still.'
- *C: *éto prosto s malen'koj myškoj sidjat' oni.* 'this, they are just sitting with the little mouse.'
- *C: *tut tože.* 'here also.'
- *C: *tut tože.* 'here also.'
- *C: *malinki.* 'raspberries.'
- *C: *malina.* 'raspberry.'
- *C: *éto oni kušajut'.* 'they are eating.'
- *C: *njam-njam-njam-njam-njam.*
- *C: *éto arbuz u nix!.* 'this is a watermelon they have.'
- *C: *vkusnyj arbuz.* 'a tasty watermelon.'
- *C: *tut vsjake malinki [+].* 'there are all kind of raspberries.'
- *C: *tak.* 'so.'
- *C: *éto malinki [+].* 'these are raspberries.'
- *C: *myška tut malinki [+] xočet'.* 'the mouse here wants raspberries.'
- *C: *u!*
- *C: *éto oni vse prišli' kušat'.* 'this they all came to eat.'
- *C: *am-am-am!*
- *C: *am!*
- *C: *éto oni na sankax.* 'they are on a slide.'
- *C: *éto na sankax oni.* 'they are on a slide.'
- *C: *nu vidiš', u nix takaja štučka.* 'here can you see, they have this kind of a thing.'
- *C: *takaja.* 'such a'
- *C: *tak.* 'so.'
- *C: *éto.* 'this.'
- *C: *éto oni v lesu.* 'they are in the forest.'
- *C: *sobra+//*
- *C: *xočet' [+] sobrat' griby.* 'they want to collect mushrooms.'

*C: <i>éto.</i>	
*C: <i>éto oni plyvutⁱ.</i>	'they are swimming.'
*C: <i>a éto na lodke prosto.</i>	'this just on the boat.'
*C: <i>éto tol'ko dve malinki.</i>	'these are only two raspberries.'
*C: <i>a éto oni nož.</i>	'and here they [get? take? have?] a knife.'
*C: <i>éto oni prosto na mašinu zabrat'sjd^p.</i>	'here they 're just getting ready to get into the car.'
*C: <i>éto.</i>	'this.'
*C: <i>éto ix mašina?</i>	'is this their car?'
*C: <i>ax, malin+//</i>	
*C: <i>malinki.</i>	'raspberries.'
*C: <i>éto myški prosto.</i>	'these are only mice.'
*C: <i>tak.</i>	'so'.
*C: <i>u!</i>	
*C: <i>nu oni malinku xočutⁱ [+] s'estⁱ!</i>	'so they want to eat raspberries.'
*C: <i>vot eti.</i>	'there are these [points to raspberries].'
*C: <i>vot eti vot xoťjatⁱ.</i>	'they want these.'
*C: <i>op-op tak.</i>	'hopp hopp like that.'
*C: <i>tak.</i>	'so'.
*C: <i>éto oni vse edutⁱ v mašine.</i>	'they are all driving in the car.'
*C: <i>du-du-du.</i>	
*C: <i>tr-r-r.</i>	
*C: <i>du-u-u.</i>	
*C: <i>éto oni že ot'exaliⁱ uže ot'éтого.</i>	'they have already driven away from this one.'
*C: <i>nu xxx.</i>	
*C: <i>éto vse myški v lesu.</i>	'all mice are in the forest.'
*C: <i>éto oni na mašine edutⁱ.</i>	'they are driving in the car.'
*C: <i>oj!</i>	
*C: <i>nemnožko pognul [= ?].</i>	
*C: <i>staraja myšⁱ!</i>	'the old mouse.'
*C: <i>staraja myšⁱ!</i>	'the old mouse.'
*C: <i>tak.</i>	'so.'
*C: <i>éto oni na mašine.</i>	'they are on the car.'
*C: <i>na mašinu xočutⁱ [+].</i>	'they want onto the car [it is a truck]'
*C: <i>a éto prosto myški.</i>	'and these are only mice.'
*C: <i>begajutⁱ.</i>	'they are running.'
*C: <i>mašina ne s nimi poka.</i>	'the car is not yet with them.'
*C: <i>ne doma.</i>	'not at home.'
*C: <i>éto oni idutⁱ na mašinu vse.</i>	'they all are going onto the car [?]'
*C: <i>da.</i>	'yes.'
*C: <i>na mašine.</i>	'(they're) on the car.'

- *C: *a èto ničego tut netu.* 'and here... there's nothing here.'
 *C: *èto.*
 *C: *èto vse estⁱ.* 'this is all.'
 *C: *nu èto vse to estⁱ.* 'this is all there is.'
 *C: *zh-zh-zh-zh.*

Jaša exclusively restricts his tense and aspect use to the present tense for durative and some few telics, and the past tense for telic verbs, which occur only in the perfective aspect. He thus follows the Aktionsart strategy found in other languages. However, unlike in the story of Ksjuša (6;3) in (8) above, aspect here is not used to mark the structure of the narrative, but is instead used to describe the events picture by picture. Note that in the story itself, no imperfective verbs in the past tense were used. Such forms appear only when Jaša comments on the picture book he had read before, once with a durative verb *čitaliⁱ* 'read', and once with a telic verb *rasskazyvaliⁱ* 'told'. This shows that he is able to use the imperfective aspect in the past tense with duratives and telics. However, the forms do not fit into his story-telling mode, which is restricted to a mere description of pictures. This confirms the observation made above that if children use certain forms that does not necessarily mean that they already master their functions.

4.3 The role of anchor tense in narratives

It has been assumed that one of the most important structural elements of a story apart from aspect is the tense employed. The predominant tense chosen by a narrator can be called anchor tense, or dominant tense. The anchor metaphor suggests that a predominant tense is absolutely necessary in a given narrative tradition; otherwise the story would appear like a ship without anchor floating around without hold.

Such an anchor tense, defined as a minimum of 75% of all finite verbs in the same tense in a text (Berman and Slobin 1994), has been taken to be important enough to serve as a criterion for story-telling: "Choice of a consistently favored tense throughout the narration was taken as a criterion for a well-formed narrative." (cf. Berman and Slobin 1994: 131). Thus, the lack of use of such an anchor tense would

have dramatic consequences. In the cross-linguistic study on narratives by Berman and Slobin and collaborators, children from age 5 up, favor one tense. The 3-year-olds in this study failed to establish an anchor tense and showed a "mixed" tense use. Berman and Slobin concluded "it shows that they have not yet established a unified narrative thread, in which grammatical tense serves to establish text cohesion and coherence, providing a temporal anchoring which is consistently distinct from time of speech." (Berman and Slobin 1994: 62f.). This might very well hold for 3-year-olds in general. However, the more general question arises whether the presence of an anchor tense can indeed be used as a criterion for story-telling. The Russian data seem to indicate that such a general claim might not be warranted.

4.3.1 The anchor tense strategy

In all languages investigated by Berman and Slobin an anchor tense was used by the great majority of adults. Table 9.7 shows the tense strategies used in these languages.

Table 9.7: Tense strategies used by adults in Berman and Slobin's study

	English	German	Spanish	Hebrew	Turkish
Anchor tense	11 (92%)	12 (100%)	12 (100%)	15 (94%)	10 (100%)
Mixed	1 (8%)	0	0	1 (6%)	0

There were only two adults in the whole adult corpus who used a mixed tense strategy. The majority of adults thus used an anchor tense.

The picture looks very different if we look at the tense strategies employed in the mouse story used in this dissertation (cf. Table 9.8). I used a control group of ten adults to test this question.

Table 9.8: Tense strategies in the mouse story

Tense strategies	Adults
Anchor tense	6 (60%)
Mixed	4 (40%)

Thus, the Russian data differ substantially from the data collected and surveyed in Berman and Slobin. Only 60% of the Russian adults use a clear anchor tense. It seems that for Russian narratives, there is considerably more freedom in the choice of tense, i.e., whether to use an anchor tense or not, than in the speech communities investigated by Berman and Slobin (1994). This falsifies Hypothesis 4, which states that also Russian adults use an anchor tense. Thus, the target behavior of story-telling is rather heterogeneous in Russian. If we took anchor tense as a criterion for story-telling, we would have to claim that 40% of the Russian adult stories do not "establish a unified narrative thread." But all the stories of the adults in this experiment are perfectly intelligible and have a clear story line. Further, all adults, independent of the tense strategy they used, mentioned all three core components.

The following story illustrates that in Russian it is very well possible to tell a coherent story without making use of an anchor tense.

(10) Vladimir 46

*C: <i>nu vot skazka takaja.</i>	'so well the story is the following.'
*C: <i>"Piknik" da?</i>	'picnic, yes?'
*C: <i>nazyvaetsjaⁱ.</i>	'it's called.'
*C: <i>v odin prekrasnyj den' mama s papoj zovutⁱ svoix malyšej.</i>	'at one wonderful day mom and dad call their little ones.'
*C: <i>i govrrjatⁱ: "Poexali, deti, na piknik".</i>	'and they say: "let's go, kids and (have) a picnic."'
*C: <i>"ura," - zakričali^p deti.</i>	'hurrah," the children started to shout.'
*C: <i>sobralis^p bystro.</i>	'they gathered quickly.'
*C: <i>vsjo v sumku položil^p produkty tam.</i>	'they put everything in the bag the food there.'
*C: <i>konfety, slasti vse.</i>	'candies, all sweets.'
*C: <i>v mašinu zaskočil^p i poexal^p.</i>	'they jumped into the car and drove off.'
*C: <i>bystro edetⁱ mašina.</i>	'the car is driving quickly.'
*C: <i>i vdrug mašina na kamen' naskočila^p.</i>	'and suddenly the car ran onto a stone/rock.'
*C: <i>i malen'kij myšonok vzletel^p vverx i upal^p na dorogu.</i>	'and a little mouse flew up and fell on the way.'
*C: <i>a mašina uexala^p.</i>	'and the car drove away.'
*C: <i>čto delatⁱ?</i>	'what to do?'
*C: <i>ostalsja^p myšonok s igruškoj.</i>	'the little mouse was left with her

- *C: *a on s soboj ešče igrušku **vzjal**^P malen'kuju.* toy.'
'and he had taken his toy with him.'
- *C: *a mašina **uexala**^P.* 'and the car drove away.'
- *C: *i ne **zametil**^P brat'ja, kak on **svalilisja**^P na dorogu.* 'and the brothers didn't notice how he fell on the way.'
- *C: *ležiť on tut i **dumaet**ⁱ: "čto že delat'?"* 'he is lying there and he thinks: "What to do?"'
- *C: *"kak že mne **dobrat'sja teper'** do nix?"* "'How can I get to them now?'"
- *C: *a tem vrmenem brat'ja i papa s mamoj **priexal**^P na krasivuju poljanu.* 'and meanwhile the brothers and mom and dad arrived on a nice meadow.'
- *C: *krugom travka zeleneetⁱ.* 'the grass is greening all around.'
- *C: *cvety krugom rastuť.* 'flowers are growing all around.'
- *C: *rečka rjadom protekaetⁱ.* 'a little stream is flowing through nearby.'
- *C: *vot.* 'there.'
- *C: *davaj oni **rasstilat'** pled.* 'so they spread out a blanket.'
- *C: *pled.* 'the plaid.'
- *C: *gotovit' edu.* 'and prepare food.'
- *C: *a deti **rezvjatsja**ⁱ.* 'and the children are frisking/gamboling'
- *C: *na pojalnke **kuvyrkajutsja**ⁱ, prygajutⁱ.* 'on the meadow they are somersaulting, they are jumping.'
- *C: *radostnye.* 'happy ones.'
- *C: *krugom cvety rastuť.* 'flowers are growing all around.'
- *C: *oni **sobirajut**ⁱ ix.* 'they are collecting them.'
- *C: *xorošo **provodjat**ⁱ vremja.* 'they are having a good time.'
- *C: *igry **zatejal**^P.* 'they organized games.'
- *C: *v laptu **vot igrajut**ⁱ detiški.* 'there the children are playing laptu (a ball game SS).'
- *C: *a drugie **kupat'sja**ⁱ **pobežal**^P na rečku.* 'and others run to the stream to take a bath.'
- *C: *a **myšonok bednyj sidit**ⁱ na doroge i **dumaet**ⁱ, čto že mne delatⁱ.* 'and the poor little mouse is sitting on the way and thinks, what shall I do.'
- *C: *"kak že mne do brat'ev?"* "'How can I get to my brothers?'"
- *C: *emu **skučno odnomu.*** 'he is bored alone.'
- *C: ***sidit**ⁱ s igruškoj i **žaluetsja**ⁱ ej: "Kak ploxo, čto menja poterjali".* 'he is sitting with his toy and he is complaining to her: " How bad that they have lost me."'
- *C: *no ničego.* 'but never mind.'
- *C: *i est' **zaxotelos**^P emu.* 'and he wanted to eat.'
- *C: *šelⁱ on šelⁱ.* 'he walked and walked.'

- *C: *i v lesu smotriť: kust maliiny rastet'.* 'and he looks into the forest: a bush of raspberries is growing (there).'
- *C: *a jagoda krupnaja, spelaja.* 'and the berries are large and ripe.'
- *C: *vot govoriť: "Povezlo mne".* 'there he says: "I am lucky.'
- *C: *i davaj on sobirat' etu malinku.* 'and he begins collecting these raspberries.'
- *C: *kušat'.* 'to eat.'
- *C: *a brat'ja v éto vremja za stol načinajuť usaživat'sja.* 'and (his) brothers meanwhile start to sit down at the table.'
- *C: *prigotovil' zakusku.* 'they have prepared the appetizers.'
- *C: *vse postavil'.* 'they have put everything.'
- *C: *napitki raznye sladkie.* 'all kinds of sweet drinks.'
- *C: *i kličuť brat'ev.* 'and they are calling their brothers.'
- *C: *mama kličeť: "Davajte, detiški, sobirajtes' k stolu vse".* 'mom is calling: "Come on children, come all to table.'
- *C: *"sejčas budem s vami perekusyvati".* 'now we all will all take a bite.'
- *C: *nu a myšonok tem vremenem malen'kij sidit' pod kustom i malinu est'.* 'well and meanwhile the little mouse is sitting under the bush and is eating raspberries.'
- *C: *i tak emu xorošo, vkusno!* 'and he is feeling good, it's tasty.'
- *C: *i vrode kak by i zabyľ, čto brat'ja ot nego uexal'.* 'and it seems as if he forgot that his brothers drove away from him.'
- *C: *a sobralis' vse brat'ja za stolom.* 'and all brothers were gathering around the table.'
- *C: *i netu malen'kogo myšonka - uvidel'.* 'and they noticed that the little mouse wasn't there.'
- *C: *davaj oni ego zvat', kričat'.* 'they start calling him, they are shouting.'
- *C: *a myšonka net nigde.* 'and the little mouse is nowhere.'
- *C: *oni i pod kamnjami polzajuť, i pod kustiki zagljadyvajuť, i u zverjušek tam sprašivajuť: "Ne videli našego myšonka?"* 'they crawled under rocks and they looked under bushes, and they ask the little wild animals there: "Didn't you see our little mouse?"'
- *C: *net.* 'no.'
- *C: *nikto ničego ne videl'.* 'nobody didn't see anything.'
- *C: *čto že delat'?* 'what to do?'
- *C: *mama plačeť, papa rasstroilsja'.* 'mom is crying, dad is upset.'
- *C: *čto že delat'?* 'what to do?'
- *C: *"davajte togda, deti, sobirat'sja".* "'let's get together then, kids.'"
- *C: *"budem iskat' našego bratika mladšego".* "'we will search for our youngest brother.'"
- *C: *bystro sobralis' oni.* 'they gathered quickly.'
- *C: *sel' v mašinu i poexal' obratno po* 'they sat into the car and they

- doroge k domu.*
- *C: *a v éto vremja myšonok malen'kij*
naelsja^P *malinki i spitⁱ ležitⁱ na*
travke.
- *C: *edutⁱ oni na mašine po doroge i*
kričatⁱ.
- *C: *bratika.*
- *C: *zovutⁱ ego, zovutⁱ.*
- *C: *i net ego i net ego vse.*
- *C: *a myšonok uslyšal^P, čto mašina*
edetⁱ.
- *C: *i bratiški kričatⁱ ego.*
- *C: *zovutⁱ ego.*
- *C: *i on k doroge stal^P probirat'sja.*
- *C: **vyskočil^P** *na dorogu.*
- *C: *a navstreču emu mašina edetⁱ s*
brat'jami.
- *C: **uvidel^P** *oni ego, kričatⁱ: "Ura!"*
- *C: *"vot!"*
- *C: *"našelsja naš bratiška".*
- *C: **vyskočil^P** *iz mašiny.*
- *C: *davaj ego obnimat', celovat'.*
- *C: *radujutsjaⁱ, kuvyrkajutsjaⁱ.*
- *C: *kak im xorošo byloⁱ.*
- *C: *i vdrug myšonok vspomnil^P, čto*
igrušku poterjal^P svoju.
- *C: **pobežal^P** *on obratno v kusty iskat'*
svoju igrušku.
- *C: **našel^P, obradovalsja^P** *tože.*
- *C: *a v éto vremja brat'ja snova s*
mamoj s papoj rasstelil^P
pokryvalo.
- *C: *na nego snova položil^P zakuski i*
stal^P prodolžat' piknik.
- drove back the road to the house.'
- 'and meanwhile the little mouse ate
himself full with raspberries and
he is lying asleep on the grass.'
- 'they are driving by car along the
road and are shouting.'
- 'little brother.'
- 'they are calling him, the are
calling.'
- 'and he isn't here and he isn't there,
that's it.'
- 'and the little mouse heard that the
car is coming.'
- 'and that the brothers are calling
him.'
- 'they are calling him.'
- 'and he started to make his way.'
- 'he jumped out on the way.'
- 'and the car with his borthers in it
comes toward him.'
- 'they saw him and are shouting:
"Hurrah."'
- 'here'
- 'our little brother has been found.'
- 'they jumped out of the car.'
- 'and start hugging and kissing
him.'
- 'they are happy, they are
somersaulting.'
- 'how happy they were.'
- 'and suddenly the little mouse
remembered that he has lost his
toy.'
- 'he ran back into the bushes to
search his toy.'
- 'he found (it), he also was happy.'
- 'and meanwhile the brothers
together with mom and dad spread
the tablecloth.'
- 'they put again the appetizers on it
and began to continue the picnic.'

Vladimir uses perfective past tense verbs and durative present tense verbs approximately in even proportion. He mentions all the core components and tells a very

vivid, clear story. Perfective past forms are used for foregrounding, and imperfective present forms for backgrounding. The foregrounding and backgrounding becomes even more demarcated, because Vladimir does not mark the foreground/ background distinction by aspect alone, but also by tense. This story shows clearly that the presence of an anchor tense is no necessary condition for story-telling. Further, it shows that the correlations of perfective verbs with the past tense and of imperfective verbs with the present tense can even be found to some extent in adult data.

Table 9.9 displays children's use of tense. Their behavior is heterogeneous as well.

Table 9.9: Tense strategies in the mouse story

Tense strategies	3-year-olds	4-year-olds	5-year-olds	6-year-olds
Anchor tense	42% (5/12)	64% (9/14)	50% (7/14)	77% (10/13)
Mixed	58% (7/12)	36% (5/14)	50% (7/14)	23% (3/13)

3-year-old Russian children are very similar to the 3-year-olds of Berman and Slobin's study. In all, 42% of the 3-year old children use an anchor tense. All the other children employ a mixed tense strategy.

From age 4 onward, more children use an anchor tense. However, we cannot detect a developmental curve, and thus Hypothesis 5 is falsified. More 4-year-olds (64%) use an anchor tense than 5-year-olds (50%). Interestingly, more 6-year-olds (77%) than adults (60%) use an anchor tense strategy. This suggests that there is considerable freedom in the way tense is used in narrations. Just because an absolute tense strategy becomes more important with age does not mean that there is a developmental milestone children would reach at some point. It is rather a tendency we can observe, but the adult data show that an anchor tense is far from being a necessary precondition for coherent story-telling.

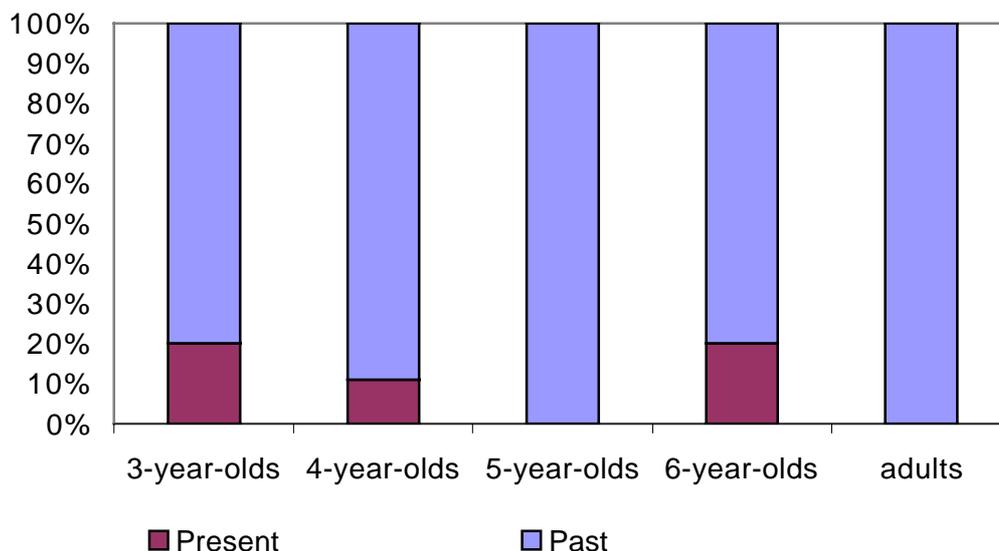
Now that we have established that the presence of an anchor tense cannot be a criterion for story-telling (at least not for Russian), let us investigate what tense is preferred as an anchor tense, if an anchor tense is used.

4.3.2 Preferred tense within the anchor tense strategy

In Berman and Slobin's (1994) frog-story project, the adults predominantly used the present as an anchor tense (except for the Hebrew speakers, who showed an approximately even distribution of present and past tense). We have proposed in Hypothesis 6 that if an anchor tense is used it is predominantly the past tense. This expectation is due to the grammatical structure of Russian. Only the imperfective aspect has a present tense reading. If the present tense was the anchor tense, we could hardly use any verbs in the perfective aspect. We know, however, that the perfective aspect is used for advancing the plot, which is the most essential function in a narrative. If the present tense was the anchor tense, foregrounding would be less frequent than we would expect in a narrative (not more than 25%). This is why I expect the past tense to be the anchor tense in Russian.

Figure 9.3 shows what tense the different age groups prefer as the anchor tense in telling the mouse-story.

Figure 9.3: Tense used as anchor tense



In all age groups the past tense is preferred as an anchor tense. The adults exclusively used the past tense. These results confirm our Hypothesis 5. Choosing the present tense as an anchor tense implies that 75% of the finite verbs must be in the

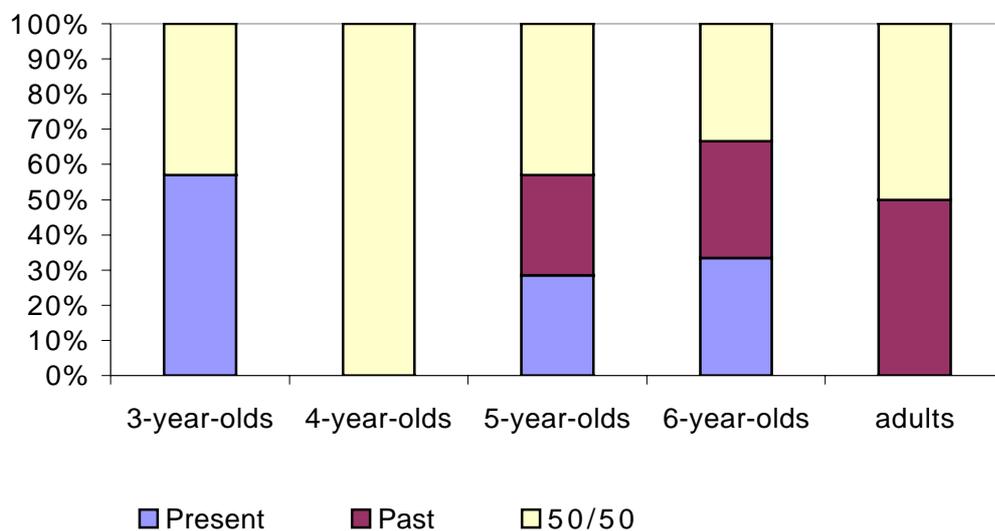
imperfective aspect (see Chapter 3 on the relevant morphological constraints). Since the main task in telling a story is bringing forward a plot, the imperfective aspect is not the most natural choice. For moving a plot forward, the perfective aspect is the unmarked choice. But in the present tense, the perfective aspect is unavailable in Russian and hence not a possible choice.

Using an anchor tense, however, is only one strategy to tell a successful narrative. The other strategy is to employ a mixed tense strategy as illustrated below.

4.3.3 Mixed tense strategy

The distribution of tense within the mixed tense strategy is not uniform. In the following, I analyze the mixed tense strategy and the difference of tense distributions we find in the Russian data. Figure 9.4 summarizes the distributions within the mixed tense strategy.

Figure 9.4: Three different mixed tense strategies



There are three subtypes of the mixed tense strategy. First, the child uses the present tense and the past tense approximately evenly (labelled 50/50 strategy in Figure 9.4).

However, it is also possible that one tense is preferred. Recall that our criterion for anchor tense is that the tense is used in 75% of verb forms. If a child does not

reach the 75% threshold, but still uses more than 60% of the finite verbs in one tense, I counted this as a preferred tense strategy within the mixed tense strategy. Thus, the child could prefer either the present tense or the past tense. The adults who employed a mixed tense strategy do not exhibit a homogeneous behavior: 50% of them (2/4), prefer the past tense, while the other 50% do not show a clear preference for either the past or present tense. However, all of them use what could be called an Aktionsarten strategy, i.e., duratives are primarily in the present tense and telics predominantly in the past tense. The 3-year olds use either present tense or the 50/50 strategy. The 4-year-olds only use the 50/50 strategy. The behavior of the 5- and 6-year-olds is more heterogeneous. All three sub-strategies within the mixed tense strategy are found.

4.3.4 Anchor tense and its correlation with story-telling

Even though we have learned that there is no correlation in the adult data between story-telling and the use of an anchor tense, such a correlation might still hold for the child data. Again as a criterion for story telling we used the above mentioned criterion of mentioning at least two core components (see Section 4.1). Figure 9.5 shows the percentages of children using a specific strategy and mentioning at least two core components.

Figure 9.5: Relationship between tense strategies and story-telling

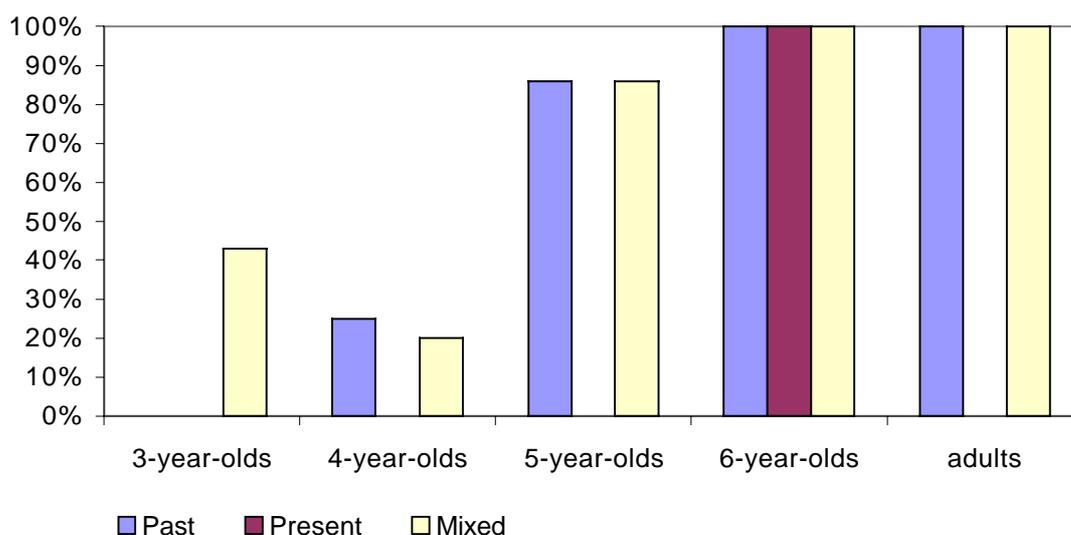


Figure 9.5 makes clear that there is no correlation between the use of a specific tense strategy and the mentioning of at least two core components, i.e., our criterion for telling a story. Interestingly, however, only the 6-year-olds show a correlation between the use of present tense as an anchor tense and the mentioning of at least two core components. None of the children in the other age-groups who use a present tense strategy fulfill our criterion for story-telling. The main correlation we find is that the older the children the more likely they are to mention at least two core components. If we look at the data of the 3-year-olds, this lack of a correlation becomes especially apparent. None of the 3-year-olds who mentions at least two core components also uses an anchor tense. For the other age groups the distribution is approximately the same whether the children use an anchor tense or not. Thus, it seems that the use of an anchor tense is not even a means to facilitate narration in Russian. One could assume that keeping with one tense makes it easier for the child when telling a story. This, however, is obviously not the case.

To sum up: the results of this analysis suggest that the use of anchor tense is not critical for story-telling in Russian. This suggests that the relevance of anchor tense is a language-specific issue and thus cannot be used as a general or even universal criterion for story-telling.

5. Conclusions

In this chapter we have looked at the distribution of Aktionsart, aspect and tense in a complex narrative and compared the results to the distribution of the production experiments of Level 1 and 2. In Chapter 8 we found that aspect and Aktionsarten are used in a context-sensitive way. This finding has been confirmed by the experiment of Level 3. From early on, aspect is used in a context-specific way and depends on the specific level of discourse complexity. This confirms our overall *Hypothesis of Context-Driven Learning*. As in the experiments of Level 1 and 2, there is wide

variation within age groups, but there is still a clear tendency in the use of aspect across experiments.

The distribution of Aktionsarten differs in the three experiments. Duratives and telics are always the strongest Aktionsarten. Whether telics or duratives dominate depends on the context. The distribution of aspect strongly depends on the distribution of Aktionsarten. This is due to the fact that all Aktionsarten except for the telic Aktionsart are pre-determined for aspect. Thus, the number of telics by and large determines the general distribution of aspect.

For this reason, it is necessary to analyze the distribution of telics separately and compare it across the three levels of discourse complexity. The distribution of perfective and imperfective aspect within the telic Aktionsart differed in the three experiments. In the Level 1 experiment the distribution of perfectives and imperfectives is approximately even. On Level 2 the perfective is strongly preferred (from 84% in the 6-year-olds up to 98% in the 4-year-olds). On Level 3 again the perfective is dominant over the imperfective aspect, but it does not reach the same degree as in the Level 2 experiment. This shows that general statement about the correlation of aspect and Aktionsart and aspect and tense can only be made if we take a wide array of contexts into account.

Aspect has often been characterized as a choice of the speaker in how s/he wants to present a certain situation. This is certainly true to a certain extent, and it is shown in the wide variation of aspect use within the different age-groups. However, we still find a similar distribution across age groups and this distribution is different for the three levels of discourse complexity. This suggests that the freedom in aspect choice has its contextual limits. If there was indeed complete freedom, we would expect quite a different distribution, i.e., we would not expect a homogeneous behavior across age groups and a behavior systematically varying across contexts.

The homogenous distribution of Aktionsarten across age groups is rather unexpected. It seems that from early on children are aware of the Aktionsarten and aspect distribution within a given context or level of discourse complexity. This uniformity in form is a remarkable fact, because, as we have seen in the experiment of Level 3, it

does not necessarily imply a uniformity in the functions that are attributed to these forms. If this finding indeed holds true in general and is not restricted to this study, it would show that children are even more sensitive to contexts than we have assumed so far. This would mean that children register and produce context-specific frequencies of grammatical forms before they necessarily learn their function. In order to recognize the distribution of Aktionsarten in a given context, the child has to register the frequencies with which a certain Aktionsart, and a certain aspect within this Aktionsart, occurs. Thus, the first step in learning aspect and its relation to Aktionsart seems to be straightforward pattern recognition. The learning of the different contextual functions is a second step, but it is the step that is the real (and challenging) learning process. For the category aspect this process takes at least several years.

Note that if we looked exclusively at the distribution of forms, we would wrongly come to the conclusion that aspect is acquired right from the beginning of language acquisition. This is falsified, not only by the comprehension data from Chapter 6 but also by the finegrained analysis of the production data in this chapter.

Another factor we have looked at in this chapter is the use of tense. In the Level 1 and 2 experiments tense was not an issue, i.e., there was no variation found. In the Level 3 experiment, in contrast, tense use varied strongly. Children both within and across different age groups used a wide variety of tense combinations. Some children used an anchor tense strategy, thereby using either the present tense or the past tense as an anchor tense. Then, across age groups, children also used what I called a mixed tense strategy, i.e., they did not use an anchor tense. This strategy came in three variations. Either the child preferred the present tense or the past tense in at least 60% of the finite verbs, but did not reach the 75% criterion, which would be the threshold for an anchor tense strategy. A third way within the mixed tense strategy was to use the present tense and the past tense approximately evenly, i.e., none of the tenses was used in 60% or more of the cases. The results of this study show that anchor tenses have quite a different status in Russian than in the languages investigated by Berman and Slobin and collaborators (1994). The results of this study further suggest that the

use of an anchor tense cannot be a universal criterion for story-telling, since not even within the Indo-European languages do we find a uniform behavior.

Research on the acquisition of tense and aspect on a wide array of languages has shown that one of the main factors for the acquisition of these categories are Aktionsarten. The results of the comprehension experiment (Chapter 6) confirmed these results in showing that Aktionsarten indeed do play a major role in the comprehension of isolated utterances. Not all Aktionsarten were understood equally well in isolation. I questioned, however, whether a generalization of these difficulties holds across different contexts and levels of discourse complexity. I will test this in the next chapter.

Chapter 10: Two Complementary Aktionsarten: Ingressives vs.

Telics

1. Introduction

To this point we have looked at the general distribution of Aktionsarten and the use of aspect in the different experiments. To give a more detailed analysis of the acquisition processes behind these general distributions, I present in the following an in-depth case study of the acquisition of one subpart of the Russian aspect system, namely the acquisition of two complementary Aktionsarten: telics and ingressives. Whereas ingressives include the beginning of an event, e.g., *On zaxoxotal* 'he started giggling', telics include the end, goal, or result of an event, e.g., *On nedavno umer* 'he died not long ago'. The comparison of these two Aktionsarten is based on the results of the experiments presented in the previous chapters.

The main goal of this chapter is to show that the acquisition of Russian aspect is a complex, multifactorial process. The four factors determining the acquisition of aspect are: Aktionsarten, discourse complexity, cognitive development, and morphology.

While children cope best with telics in all experiments, we found that they do not generally understand ingressives in isolation (cf. Chapter 6 on the comprehension experiment of Level 1, focusing on the understanding of aspect in isolated utterances). In contrast, children produce ingressives early on in describing sequences of events, as we have seen in Chapter 8 (Level 2 experiment on the description of a complex event) and Chapter 9 (Level 3 experiment on complex narratives). The production of a sequence of events presupposes advanced narrative competence, i.e., a certain level of general cognitive development. I will show that there is a direct correlation

between the use of ingressives and the narrative competence of the children using these forms.

Further, I will show that morphological marking is a relevant factor in the acquisition of ingressives (cf. Chapter 2): in contrast to the more complex synthetic ingressives such as *on zaplakal* 'he started crying', the morphologically simpler analytic ingressives, such as *on načal stroit dom* 'he started to build a house' show a clear development over age.

I compare the acquisition process along two parameters: (i) comprehension vs. production, and (ii) two levels of discourse complexity: isolated utterances and complex texts.

The difference between these two levels of discourse complexity has a direct reflex in the use of verbs of specific lexical Aktionsarten in Russian: while the telic Aktionsart can occur in any context, as shown in the analysis of all four experiments, the ingressive Aktionsart typically requires a narrative or at least a sequence of events.

The acquisition of the telic and the ingressive Aktionsarten is studied through three of the four experiments presented in the previous chapters: the comprehension and production experiments of Level 1 and the production experiment of Level 3. I did not include the experiment of Level 2 in this comparison, because what we are interested in is whether there is a difference in the use of ingressives in isolated and concatenated utterances. This question can be tested sufficiently with the experiments of Level 1 and 3. Together, the experiments control for two levels of discourse complexity:

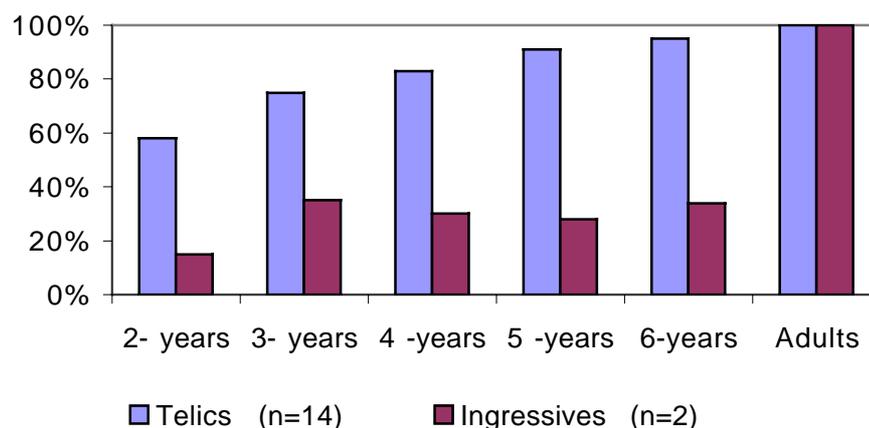
Level 1 is represented by a comprehension test and a production test. On Level 3, in contrast, we only have a production experiment. Ideally we would have two parallel experiments on both levels, but it is methodologically very difficult if not impossible to test the understanding of aspectual forms in a complex text. In such a setting there are too many confounding variables that could be responsible for the understanding of aspectual forms. This is why I restricted Level 3 to a production test.

The chapter is structured as follows: first, I recapitulate the results of the comprehension experiment with respect to the telic and ingressive Aktionsarten. These results lead us to the hypotheses of this chapter. To test these hypotheses, I analyze the use of telics and ingressives in the Level 3 experiment. The results of this narration task are then compared to the results of the comprehension experiment of Level 1. In order to ensure that the results are not due to the mode of tests, i.e., comprehension vs. production (on Level 3), I further reassess the results of the Level 1 production experiment and compare them to the results of the other two experiments. In the conclusions, I summarize the results of this chapter and show how they allow us to draw more general conclusions about language acquisition and how they raise some general methodological issues.

2. Ingressives and telics in the comprehension experiment (Level 1)

Figure 10.1 recalls the distribution of telics and ingressives in the comprehension experiment (Chapter 6).

Figure 10.1: Mean percentages of understood ingressives and telics in the comprehension experiment (Level 1)



For telics, we see a clear developmental curve, starting with 58% of correct answers in the 2-year-olds and going up to 95% in the 6-year-olds. The ingressive Aktionsart

proved to be the most difficult Aktionsart for children of all age groups. All children showed a significant preference for the "wrong" picture, i.e., their answers were not random. This means that they did not understand ingressive verbs in isolation: in interpreting the verb prompt, they preferred the picture that depicted the pure action without showing the initial boundary of the event.

Thus, telics seem to be much easier to understand than ingressives and the other Aktionsarten in general. Why is this so? Why are telics so much easier to understand in this experiment than ingressives? Instead of positing a priori an innate predisposition for the telic Aktionsart, I have hypothesized (Stoll 1998 and Chapter 6) that the better result for the telic Aktionsart is due to the level of discourse complexity of the communicative context of the experiment, i.e., the type of context I looked at in this experiment. It is plausible to assume that in isolation a result such as, for example, having eaten up a bowl of cereal, should be more worth reporting than the temporal beginning (ingressives), e.g., the beginning of eating the cereal. Thus, in isolation, the qualitative change of situation seems to be more important than mere temporal change, where only the beginning, the duration, or the cessation of a situation is expressed. A qualitative change of situation can be reported and focused on in isolation, but a temporal change of situation, such as the beginning of an event, is typically seen in relation to some other action or event and makes most sense in such a context. I suggested that it is probable that, in isolation, telic verbs are more salient for children than ingressives, which imply only a temporal change. There is no qualitative result present in such a change. The event itself is more important and hence the picture depicting the action alone is chosen by the children.

Since the comprehension experiment assessed only events in isolation, the difficulty children had with ingressives might be due to this specific context or indeed rather the lack of a necessary context for ingressives. If this is true, ingressives should be more salient in other contexts, in which such forms are more typical, such as the concatenation of events in a narrative. Bamberg and Marchman find this for a similar construction in German: "...in the adult German narratives, inceptive aspect [a term that corresponds to my ingressive Aktionsart – SS] – whatever surface form it takes –

functions to signal the 'opening' of a narrative sequence of events which requires a subsequent 'closure' "(Bamberg and Marchman 1994: 564). It seems to me, however, that for Russian and German constructions the important feature is not closure but rather the embedding in other utterances. Accordingly, Aktionsarten with a temporal change of situation should be easier for children in a task that embeds forms in such contexts. If, for instance, children used these verb forms in the context of a story, this would show the context-specificity of their learning and knowledge, lending support to the general *Hypothesis of context-driven learning* advanced in the Introduction. This would suggest that they learn verb forms in their prototypical context. It is only later that the meaning of a verb or construction becomes detached from this context and becomes generalized into an abstract meaning.

In the following I first present the specific hypotheses being tested. Then, I analyze the distribution of ingressives and telics in the Level 1 and Level 3 production experiments and compare these distributions to what is found in the comprehension experiment.

3. Hypotheses

In the Introduction, I proposed the *Hypothesis of contextual relativity of aspect and Aktionsart*, which states that the occurrence and frequency of an Aktionsart depends on the context.

In the preceding chapters we have seen that the distribution of Aktionsarten indeed depends on the context. Though telics and duratives were always the main Aktionsarten, the context decided which of them was more frequent. Thus, the results of the previous chapters have confirmed the *Hypothesis of contextual relativity of aspect and Aktionsart*.

The *Hypothesis of contextual relativity of aspect and Aktionsart* applied to telics and ingressives states that telics are contextually much more independent than

ingressives, which are contextually very restricted. Ingressives typically occur in the description of sequenced events, but not in isolated utterances.

If Aktionsart distributions are context-specific, we can expect that children learn Aktionsarten and also aspect with the help of these distributions. This brings us back to the other main hypothesis of this dissertation, the *Hypothesis of context-driven learning*, which states that the acquisition of linguistic forms and categories starts in specific contexts and is only later generalized to other contexts.

Applied to ingressives, the *Hypothesis of context-driven learning* predicts that children will produce ingressives in embedded contexts, but not in isolated utterances:

Hypothesis 1:

Children use ingressives in a task involving sequences of events.

To understand and linguistically express a sequence of events presupposes an advanced level of narrative competence.

Hypothesis 2:

Only children with sufficient narrative competence use ingressives.

Narrative competence is assessed through the cue of core story components as developed in Chapter 9. Further, I hypothesize that children have less difficulty with analytic ingressives than with synthetic ingressives (cf. Chapter 2), because analytic ingressives are morphologically more transparent and productive in contrast to synthetic ingressives.

Hypothesis 3:

Children prefer analytic ingressives over synthetic ingressives.

Hypothesis 1 stated that children will produce ingressives to narrate sequenced events. Hypothesis 4 makes the stronger claim that children will not use ingressives to describe isolated events.

Hypothesis 4:

Children do not use ingressives for describing isolated events.

These hypotheses will be evaluated in the remainder of this chapter.

4. Telics and Ingressives in production: narratives (Level 3)

The results of the comprehension experiment reported on in Chapter 6 have shown that children have the greatest difficulty with the ingressive Aktionsart. The *Hypothesis of context-driven learning* implies that children should more easily produce ingressives in a narrative context, but that at the same time, they should master them much less well in a non-narrative context with isolated utterances such as the ones used in the comprehension experiment. To test this hypothesis, I compare this result with the results from the narrative task of Level 3.

It is important to recall the differences between the comprehension and production experiments, as discussed in Chapter 7. In the comprehension task, children had a clear choice between two pictures and the answer was either right or wrong. All relevant factors were strongly controlled for, i.e., the event itself, the morphological make-up of the verb, the Aktionsart and the aspect of the verb. In the production experiment, in contrast, the children had a choice which Aktionsarten they wanted to use, specifically, whether they wanted to use ingressives or not. The only factor I could control for was the event shown. Everything else was up to the child. Thus, in this production task, children could easily circumvent forms they did not know yet; they could choose how to describe an event and select the forms they wanted to use, i.e., use the forms they have at their disposal. In the comprehension study, in contrast, children could not circumvent the issue of ingressivity: either they understood the verb form or they did not. In this respect, the data has to be evaluated differently.

As discussed in Chapter 2, there are two types of ingressives: synthetic and analytic ingressives. In the comprehension experiment only synthetic ingressives were

tested. Since children were free in their descriptions of the events in the production experiments, it could well be that they would prefer analytic ingressives. The comparison of their use of synthetic and analytic ingressives allows us to test whether they have a problem with ingressives in general or rather with synthetic ingressives alone.

4.1 Synthetic ingressives

As stated in Chapter 2, there are several subgroups of synthetic ingressives defined by different prefixes, but the main important group are the ingressives built by the prefix *za-*. In the following I focus on these alone.

The difference in performance between synthetic ingressives in the production experiment (Level 3) and ingressives in the comprehension experiment (Level 1) is shown in Table 10.1.

Table 10.1: Percentage of subjects understanding and using synthetic ingressives

Age	Comprehension task Level 1: Children understanding ingressives	Production task Level 3: Children using ingressives
3-year-olds	20% (4/20)	0% (0/12)
4-year-olds	5% (1/20)	38% (5/13)
5-year-olds	15% (3/20)	29% (4/14)
6-year-olds	10% (2/20)	23% (3/13)

As mentioned above, in the production experiment children had a choice of whether or not to use ingressives at all. Although they could have chosen not to use ingressives at all, we observe that, except for the 3-year-olds, more children used ingressives in the production experiment of Level 1 than children understood ingressives in the comprehension experiment of Level 1. This confirms Hypothesis 1. However, there seems to be no developmental trend over age, as shown by the Spearman correlation coefficient ($r=.0996$, $p=.478$). This would suggest that these forms become productive only after age 6.

If children had made no use of ingressives in the more appropriate context, i.e., in the complex narrative of Level 3, and thus had behaved as in the comprehension experiment, the *Hypothesis of context-driven learning* would have been falsified. The findings above, however, suggest that the *Hypothesis of context-driven learning* tested for ingressives has not been falsified by the experiment, but indeed strengthened. While children of all age groups fail to understand ingressives in isolated utterances, they master these much better in narratives, at least from age 4 onward. The question that now arises is whether context is the only relevant factor for the acquisition of aspect.

If we examine the data more closely, we realize that we also need to include the cognitive development of the child in the analysis.

In discussing the results of the comprehension experiment (Chapter 4), I hypothesized that ingressives require a sequence of events in order to be meaningful. If this is true, narratives should be a natural context in which to look for ingressives. To construct a narrative or at least part of a narrative, a child must at least be able to understand events as sequenced in time, their possible causality, the role of protagonists, etc. We can expect a correlation between narrative competence, which is one important aspect of a child's general cognitive development, and the use of ingressives in a story (Hypothesis 2). As discussed in Chapter 9, I use three critical core components that need to be mentioned if a text can be counted as a narrative in the experiment.

1. The loss of the mouse.
2. The realization of the loss and the search.
3. Family reunion.

Like in Chapter 9, I assessed narrative competence by the mentioning of at least two core components.

Table 10.2 illustrates the correlation between the children using ingressives and the mentioning of at least two of the core components of the story.

Table 10.2: Proportion of children at each age who use ingressives and mention at least two core story elements.

Age	3-year-olds	4-year-olds	5-year-olds	6-year-olds
Ingressives	0% (0/0)	20% (1/5)	75% (3/4)	100% (3/3)

None of the 3-year-olds used a synthetic ingressive. Within the group of 4-year-olds only one out of the five children who used ingressives mentioned at least two core components.¹ The behavior of the 5- and 6-year-olds shows a strong correlation between narrative competence and the use of ingressives.

The behavior of the 4-year-olds suggests that telling a story on a larger scale is not a necessary criterion for the use of synthetic ingressives. A more fine-grained analysis shows that for the presence of ingressives, it seems to be enough that at least some larger chunks of the story are recognized and told by the child (or even of a story that the child is just making up). In fact, all four 4-year-olds who used synthetic ingressives but did not qualify for the two-component criterion of Figure 10.2 told at least some larger connected chunks with clear protagonists in which the synthetic ingressives were embedded. Thus, the exceptional score of 4-year-olds is in fact more apparent than real. A more fine-grained analysis shows that this score is not an outlier, but 4-year-olds behave the same as 5-year-olds and 6-year-olds. They embed ingressives in a sequence of events. For the use of ingressives it seems to be enough that a child can relate several events.

These findings corroborate the explanation suggested above: synthetic ingressives need to be embedded in a sequence of events but do not make much sense for children in isolation. These findings also suggest that an overall narrative competence is not necessary for the use of ingressives. It is enough that a child recognizes sequences of events on a micro-level, i.e., in the concatenation of several utterances. This confirms Hypothesis 2 for all age groups. These results allow for a

¹ One of these children mentioned Core Component 3 (the reunion) indirectly, which makes clear that he understood the story even without mentioning the other core components explicitly. However, in Table 3 I did not count such implicitly mentioned components.

generalization suggesting that only if a child is able to recognize events in sequence will s/he use ingressives.

Judging from these data alone, we could assume that ingressivity is a more complex concept for children than telicity, because it presupposes the ability to sequence events in time. Only children who were at least able to sequence events on a micro-level used ingressives. Telic verbs showed a clear developmental curve in the comprehension experiment (cf. Chapter 6 and Figure 10.1 above), and in the production experiment of Level 3, telics were used from early on and across all age groups (cf. Chapter 9). There is no such development for synthetic ingressives. However, to take ingressivity as cognitively more complex would be premature. As mentioned above (and discussed in detail in Chapter 2), there is another means to express the beginning of an action or event, namely analytic ingressives, and before we make statements about cognitive complexity we need to also know how children treat analytic ingressives.

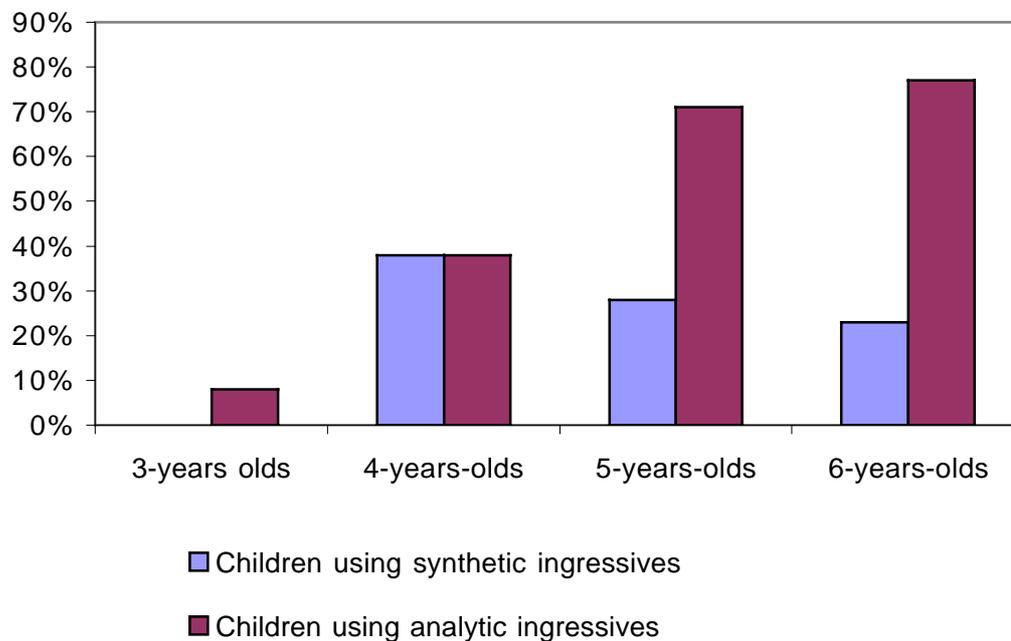
In the following section, I will show that children do not have intrinsic difficulties with the concept of ingressivity, but rather that they have a more specific problem with the morphological category of synthetic ingressives.

4.2 Analytic ingressives

As shown in Chapter 2, the analytic category of ingressives consists of the auxiliaries *stat*^P 'become' or *načínat*ⁱ/*načat*^P 'start, begin' plus the infinitive of an imperfective verb, e.g. *On načal*^P *rabotat*ⁱ *v Moskve* 'he started to work in Moscow', *on stal*^P *dumat*ⁱ *o rabote* 'he started to think about work'.

Unlike synthetic ingressives, for which we could not detect any development in the narratives over the four age groups, we find a steady increase in the use of analytic ingressives over age. Only 8% of the 3-year-olds used analytic ingressives; this increases to 77% of the 6-year-olds. Figure 10.2 compares the two types of ingressives.

Figure 10.2: Percentage of children using synthetic and analytic ingressives in the Production experiment of Level 3.



Whereas only 28% of the 5-year-old children used synthetic ingressives, 71% of them used analytic ingressives. From age 5 onwards the analytic construction seems to be clearly preferred over the synthetic category of ingressives. (The Spearman correlation coefficient shows that there is a significant development over age: $r=.4988$, $p=.000$.) These results confirm Hypothesis 3, which proposed that children prefer analytic ingressives over synthetic ingressives. This is likely to be due to the fact that analytic ingressives are productive in the target language, whereas synthetic ingressives are not. Further, the analytic construction is lexically less restricted than the synthetic group. The analytic group can either denote a punctual inception or an inception stretched out over a longer period. If the inception is not instantaneous, the imperfective part of the construction (i.e., the infinitive) is more emphasized (cf. Chapter 2, Section 2.2.2). Moreover, the prefix *za-* that marks many of the synthetic ingressives is highly polysemous, and this no doubt adds to the complexity of the category. All these factors might be relevant for why the analytic construction is preferred by children.

Now that we have established that ingressives per se are not a difficult category, but that it is rather more specifically synthetic ingressives that prove difficult for children, we need to test whether the correlation of narrative competence with the use of ingressives carries over from synthetic to analytic ingressives.

As was the case with synthetic ingressives, the 3-year-olds and 4-year-olds do not show a correlation between the use of ingressives and story telling on a larger scale. The 5-year-olds and 6-year-olds show a strong correlation between story telling and the use of analytic ingressives. In the analysis of the conditions under which synthetic ingressives are used, we have found that it is enough that children are able to sequence events without necessarily being able to tell a coherent narrative. Thus, instead of the mentioning of at least two core components, the embedding of ingressives in a sequence of events is a more reliable criterion. This also holds for the use of analytic ingressives (cf. Table 10.3).

Table 10.3: Proportion of children at each age who use analytic ingressives and mention at least two core story elements.

Age	3-year-olds	4-year-olds	5-year-olds	6-year-olds
<i>stat' načinat'/načat'</i>	0% (0/1)	0% (0/5)	80% (8/10)	100% (10/10)

To sum up: in addition to the level of textual complexity, i.e., whether we are dealing with isolated utterances or a complex text, the cognitive development of the child, measured by the ability to sequence events, is an important factor in the acquisition of aspect.

The two experiments so far strengthen the *Hypothesis of context-dependent learning*. However, the two experiments differ in two parameters. First, they differ in the type of experiment, i.e., comprehension vs. production. Second, they differ in the level of textual complexity built into the experiment. To ensure that it is not the first parameter that is responsible for our results, but the second, i.e., the level of discourse complexity, we need to compare these results to an experiment where the second parameter is kept constant. In other words we need to compare the results of the comprehension experiment with a production experiment that deals with isolated

utterances.¹ Let us now test Hypothesis 4, looking at the results of the Level 1 production experiment with respect to telics and ingressives.

5. Telics and Ingressives in Production: isolated events (Level 1)

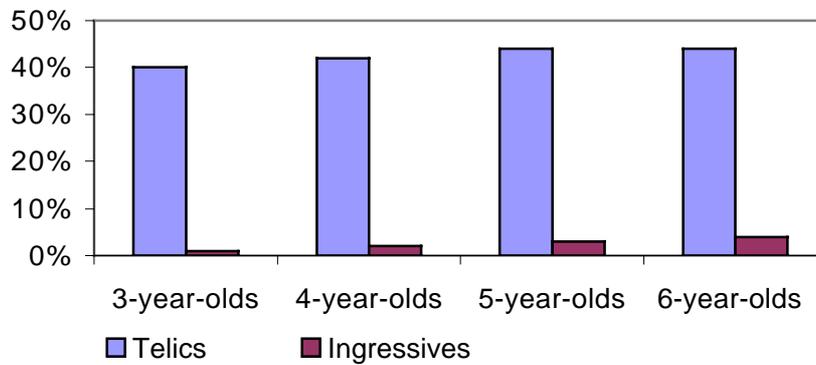
The comprehension experiment (Chapter 6) established that there is a clear development in the understanding of aspectual forms over age. This developmental curve is predominantly due to an increase in the comprehension of telic verbs. The other Aktionsarten played a rather marginal role in the developmental curve. In particular, ingressives did not show a development over age. Now the question arises whether this is true for the production data as well.

In fact, as discussed in Chapter 7, we cannot expect the same developmental curve in the production data. Since telics are the Aktionsart that children of all age groups seem to know best, and all children did in one way or another describe the scenes presented in the production experiment, we cannot expect the same curve for telics as we found in the comprehension experiment. Such a curve would mean that the older the children are the more telics they use. Now, all children described the scenes in one way or another. What we would expect then, is that they use those forms that are easiest for them. If this is so, we could at best expect that the percentage of telics decreases over age in favor of the other more "difficult" Aktionsarten. However, given the general freedom children had in the experiment, even such a trend does not necessarily transpire in the results.

As a first step, let us analyze the distribution of telics and ingressives in the production experiment of Level 1. Figure 10.3 summarizes the results.

¹ Another option would be to keep the other parameter constant and compare comprehension and production of narratives. As pointed out in the introduction, however, this is virtually impossible for practical reasons.

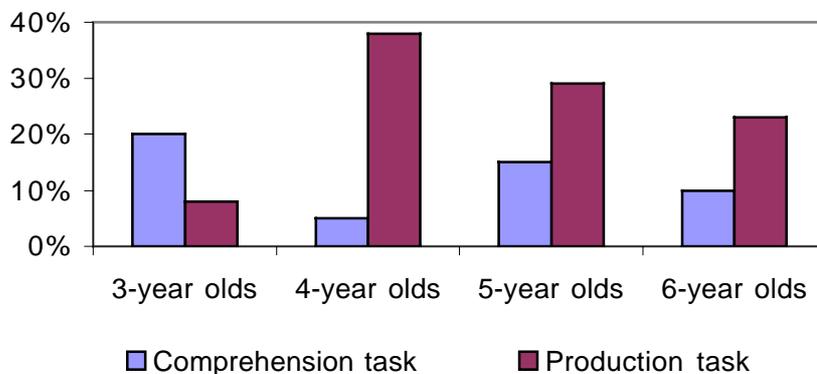
Figure 10.3: Mean percentage of ingressives and telics used in the production experiment of Level 1.



For neither telics nor ingressives does there seem to be a clear-cut development over age. For both Aktionsarten there is very wide variation throughout all age groups. Spearman's correlation coefficient shows that there is no significant correlation between the ratio of telics or ingressives and age (telics: $r=.2335$, $p=.076$, ingressives: $r=.2317$, $p=.078$), i.e., there is no significant development over age. This confirms the expectation as set out above.

I hypothesized that ingressives are not appropriate in single utterances because the use of ingressive verbs presupposes a communicative context that is larger than a single utterance. In other words, in order to state the beginning of an action, it is preferable to have at least one other event preceding or following. Since this condition is not given in the films of the production experiment, we can expect that children will not behave differently than in the comprehension experiment, i.e., they will disfavor ingressives. Figure 10.4 compares ingressives in comprehension and production of Level 1. The comparison shows that proportionally more children use ingressives than children understand them.

Figure 10.4: The comprehension and production of ingressives in the Level 1 experiments



Thus, as in the production experiment of Level 3, in the production experiment of Level 1 the number of children using ingressives is higher than the number of children understanding ingressives in the comprehension experiment. This seems to falsify Hypothesis 4, which states that children do not use ingressives in describing isolated events. It further seems to indicate that the difference in behavior is due to the type of data, i.e., comprehension vs. production.

However, the conclusion that the type of data is responsible for the different results is not valid, as a closer look at the data reveals. As already pointed out, the possible contexts in which ingressives could appear in the present production experiment differed substantially from the comprehension experiment. In the production experiment children had a choice as to how to describe the event. They could either choose to describe it briefly with a single utterance, such as (1), or they could give more context in which they embed the ingressive, as in (2).

- (1) *Toša zaplakal.*
'Toša started crying'. (M 6;0)
- (2) *Maša podnjala glavu naverx, potom zasmejalaš'* (F 4;11).
'Maša raised her head and then started laughing/ burst out laughing.'

If children indeed preferred to embed ingressives into a sequence of utterances, this would strengthen Hypothesis 4 and at the same time the *Hypothesis of context-driven learning*. We can thus hypothesize that if a child uses ingressives, s/he embeds

them in a sequence of events. The relevant data for testing this hypothesis is summarized in Table 10.4.

Table 10.4: Ingressives in isolated and concatenated utterances in the production experiment of Level 1

Age	Ingressives used in isolated utterances	Ingressives used in concatenated utterances
3-year-olds	1 (25%)	3 (75%)
4-year-olds	5 (71%)	2 (33%)
5-year-olds	3 (23%)	10 (77%)
6-year-olds	3 (18%)	14 (82%)

Before we analyze the behavior of the children of the different age groups, let us emphasize that the overall percentage of ingressives is very small (cf. Chapter 9) and the conclusions we draw must necessarily be tentative.

Children of all age groups, except the 4-year-olds, strongly preferred to embed ingressives in a sequence of at least two events. Such a correlation does not hold for the other Aktionsarten, which appeared in isolated utterances to a significant degree. Thus, children themselves supply the preferred context for ingressives even in a task that asked for a description of a simple event. This clearly supports Hypotheses 1 and 4, stating that the typical and preferred context of an ingressive consists of a sequence of events and that children are sensitive to this fact.

Only the behavior of the 4-year-olds seems to be deviant. If we take a look at the curve of the two parameters it strongly suggests the well-known phenomenon of U-shaped learning curves. Such curves have been found in the development of a variety of linguistic features. A famous example is the learning of irregular past tense forms in English (Rumelhart and McClelland 1987). At the earliest stage of past tense production, children use the correct forms for strong verbs, e.g. *he went*. At a second stage, they start to overgeneralize regular forms, for example, replacing *he went* with *he goed*. In a third stage they come back to the correct irregular forms. The same sort of curve is found in this production task. The youngest children behaved like the older

children, i.e., they preferred to embed ingressives into a sequence of utterances. This would suggest that they are sensitive to the appropriate context for ingressives which again presupposes a sensitivity to context-specific distributions of Aktionsarten. The 4-year-olds had a different strategy, mainly using ingressives in isolation. It seems that they generalized the use of ingressives to contexts in which ingressives are unusual even though not wrong. 5-year-olds and 6-year-olds again preferred to embed ingressives in a sequence of connected utterances. This suggests that the imitation of the appropriate contextual distribution is mediated by a phase of generalization to other contexts. In fact, this mechanism of generalization is necessary to allow the language learner to get from pure imitation to a stage in which he can use language as a generative system. When and how generalizations come into play remains the task of future research. What becomes clear from this dissertation, however, is that the acquisition of aspect generalizations depends on several factors, such as Aktionsarten, cognitive development of the child, age, and probably several other factors.

6. Conclusions

The comparison of Aktionsarten in different contexts presented in this chapter shows that context is an important factor for the acquisition of verbal categories like aspect and Aktionsarten. Hence, context proves to be important not only in the earliest stages of acquisition, but at least until age 6. This is shown by the different pace in the acquisition of aspect across different Aktionsarten. In the comprehension experiment, children start out with a much higher correct rate of telics (2-year-olds) than of other Aktionsarten. The 3-year-olds already show a correct rate of 75% of telics in the comprehension experiment. Telics in the comprehension experiment show a clear development, reaching 95% of correct answers for the 6-year-olds. Ingressives, in contrast, are a later development. It has been shown that ingressives typically occur in a different context than telic verbs. Whereas telics can occur in all

contexts, hence also in isolation, ingressives need a minimum context of two utterances. This has been confirmed by the results of the two production experiments.

These results further support the *Hypothesis of contextual relativity of aspect and Aktionsart* and they strengthen the explanation suggested in Chapter 6 for the difficulty that children across age groups had in understanding ingressives in isolation.

We have seen that Aktionsarten and the communicative context – specifically contextual complexity – are relevant factors for the acquisition of aspect. However, these are not the only two factors that are important. In the narration task of Level 3 it turned out that morphology plays a role as well. We saw that children treat synthetic and analytic ingressives differently. Even though synthetic ingressives are used more often in the production task than they are understood in the comprehension task, we could not detect a developmental curve. The situation is different for analytic ingressives, where we do find a developmental curve, which, however, starts out later than the curve for telics. This curve strongly correlates with cognitive development, measured here by the ability to sequence events. Only at age 4 do children start to use the analytic forms productively (50% of the children). The reason for this seems to be that ingressives are necessarily embedded in a sequence of events, and younger children cannot yet understand these sequences in a picture narration task. Telics, in contrast, are not constrained to such an environment, and are typical for isolated utterances as well. This means that telics are less restricted in their use than ingressives and are therefore an earlier development.

There might be a difference in cognitive complexity between ingressives and telics. The function of ingressives is cognitively more complex, because not only a single isolated event needs to be registered for an appropriate use of ingressives, but a sequence of events. In order to be able to present a sequence of events, certain cognitive prerequisites have to be met, such as the recognition of causal and temporal relationships, and the recognition of a protagonist in a story or sequence of events (cf. Berman and Slobin 1994). The findings of this chapter show that the ingressive Aktionsart is typically not used before its appropriate function is cognitively available.

Slobin discusses a similar case, the converb *-ErEk* in Turkish, for which "proper use requires an ability to manage attention flow in narrative" (Slobin 1995: 366); hence this form is a relatively late development, and not acquired before age 7. Interestingly, Slobin (1995: 351) finds that even though the form *-ErEk* is frequent in speech directed to children, it is nevertheless virtually lacking in their own speech throughout the preschool period.

The findings of this chapter thus lend further evidence to Slobin's findings about the close interaction of linguistic and conceptual development and the complexity of a linguistic sign. However, they add one crucial component to be interrelated with his findings, namely the importance of the discourse context in which a linguistic feature is embedded. This chapter shows that children can successfully use a certain form in one context (sequenced utterances) but not comprehend the same forms in another context (isolated utterances). For successful statements about the acquisition of a linguistic feature these differences have to be taken into account.

In summary, the comparison of the comprehension and production experiment shows in some detail how four major factors interact in the acquisition of Russian aspect, namely: Aktionsart, context, cognitive development of the child (as assessed by narrative competence), and morphology (syntheticity vs. analyticity). No single factor on its own is sufficient to account for the acquisition of such a complex category as Russian aspect.

This confirms what Shirai has suggested for the acquisition of Japanese tense and aspect morphology, namely, that we need to take a "multiple factor perspective" (Shirai, *et al.* 1998: 303). Of course, there other factors – specifically, individual variation and caretaker input (Shirai and Andersen 1995; Shirai, *et al.* 1998; Aksu-Koç 1998) – that need to be considered as well, as is true for language acquisition research in general (Bates, *et al.* 1988; Lieven, *et al.* 1992), but these other factors are outside the scope of the present study.

On a more general level, the results of this comparison call for detailed attention to different communicative contexts, with different discourse complexity in language acquisition, e.g., isolated utterances, short stories, free conversation data with diverse

topics, etc. One context or one experiment can never be sufficient for making a statement about the acquisition of a linguistic feature; rather, what we need is a systematic comparison of a given form or category in different contexts. Only when we find that the form is equally well understood and produced in a range of diverse contexts with different levels of textual complexity, can we confidently speak about the acquisition of a linguistic category.

Chapter 11: Conclusions

1. Findings and explanations

In Part I of this dissertation I argued that aspect is an intricate category with complicated morphology, semantics, and pragmatics. To account for these complexities on a theoretical level, I proposed a markedness approach that distinguishes between morphological, semantic, and contextual markedness. In the following, I recapitulate this proposal and show how it relates to the findings about the acquisition of Russian aspect in the empirical part of the dissertation.

First, morphological markedness of Russian aspect depends on the concept of *pair*. I argued that we need to distinguish two types of pairs. There are pairs which developed by prefixation. This is traditionally called perfectivization (labelled Type I in Chapter 5) and usually involves an additional change in meaning in the perfective partner derived from a simplex imperfective verb. For this type of pair the imperfective aspect is the unmarked member of the opposition. An additional morpheme is added in the perfective aspect, which is thus the morphologically marked member of this type of pair. The other type of pair is derived by what is called (secondary) imperfectivization (Type II) and is marked by an additional morpheme. Here, it is the imperfective partner that is the morphologically marked element. Thus, there is no absolute morphological markedness for aspect, but morphological markedness depends on the type of pair involved.

Second, I distinguished two types of semantic markedness. On the one hand, there is inherent, or systemic semantic markedness, which makes a general statement about the semantic markedness of aspect, independent of Aktionsart. This is the type of markedness introduced by Jakobson (1932). In Russian, the perfective aspect is in this sense the marked member of the aspect opposition. On the other hand, I

demonstrated that it is useful to distinguish this kind of markedness from semantic markedness dependent on Aktionsart, which I called Aktionsart-specific semantic markedness (cf. Chapter 5). An Aktionsart-specific semantic markedness opposition is found only with telic verbs (corresponding to Type II verbs) because for all other verbs aspectual pairing also involves a change of Aktionsart. In the telic Aktionsart, the Aktionsart-specifically unmarked member of the opposition is the perfective aspect. This corresponds to the morphological markedness pattern of telics. Thus, perfective telics are both morphologically and Aktionsart-specifically unmarked, even though the perfective aspect as a general grammatical category is inherent semantically marked. According to these markedness relations we can expect that secondary imperfectives are especially difficult for children, and are probably in general restricted to specific contexts. This is borne out by Gagarina's (2000) finding of the earliest uses of aspectual forms and by the production data reported on in Chapters 7-9: secondary imperfectives are rarely used in most contexts. The only context where they are better established is in the Level 1 production experiment.

Third, I introduced contextual markedness. This type of markedness derives from the frequency of forms in different contexts. I hypothesized in Chapter 2 that the distribution of aspect and Aktionsart depends on the context (*Hypothesis of contextual relativity of aspect and Aktionsart*). The most frequent form in one context is the unmarked form. For instance, the typical purpose of a narrative is to develop a plot with sequenced events. The perfective aspect is the unmarked aspect for this task. Thus in a narrative the unmarked aspect is the perfective aspect. I expected that children would be sensitive to these contexts and distributions of forms and thus that they would approach aspect by relying on such contextual distributions. This was formulated in the *Hypothesis of context-driven learning*.

In Part II, I presented experimental evidence on how children actually acquire this complex set of aspectual forms and functions. I concentrated on one genre, namely narratives, for which aspect is of known importance. Since we cannot assume a priori that aspect behaves the same in narratives with differing complexity, I

heuristically distinguished three levels of discourse complexity. To test these three levels, I designed four experiments.

Level 1 tested isolated utterances in comprehension and production. This level dealt with a very rudimentary "single-event" narrative. Level 2 investigated the narration of a complex event. Level 3 studied the narration of several interrelated events making up a complex story. In the Introduction, I mentioned four questions which this dissertation aimed at answering.

The first question is whether aspect is an innate category, or whether there are other possible explanations. The comprehension experiment of Level 1 testing isolated utterances (Chapter 6) clearly shows that aspect is neither innate nor present right from the beginning as a category. In this experiment a definite developmental curve was found. Having shown that aspect is not an innate category, I then needed to show how this category can be learned. This is the issue underlying Questions 2-4 posed in the Introduction.

Question 2 asked how the acquisition of aspect interrelates with lexical Aktionsart and aspect, and whether lexical Aktionsart helps in acquiring aspect. In the literature on the acquisition of aspect in various languages a strong correlation is found between aspect and Aktionsart on the one hand and Aktionsart and tense on the other hand (cf. Li and Shirai 2000 for a useful summary of these findings). This seems to be true for the earliest verb occurrences of Russian as well (cf. Gagarina 2000). In the analysis of the diary data of two Russian children, Gagarina found that the children's earliest verb uses are very much restricted. Perfective telic verbs are used exclusively in the past tense (with one exception) and imperfectives are used exclusively in the present tense. Why should children do this?

The correlation between telics and the perfective aspect can be explained by the *Aspectual Uniformity Hypothesis*, stating that "Aspect and Aktionsart representations have the same format, and this format is the same on all levels of meaning composition" (Bickel 1996: 17). The perfective aspect highlights or signals one or more boundaries of a verb without taking into account the phase which might precede or follow the boundary. Thus, since telic verbs have a boundary in their semantics, the

most natural aspect to apply is one that highlights this boundary. This is the perfective aspect. In other words, the perfective aspect is the unmarked choice for telic verbs. The perfective aspect is the Aktionsart-specifically unmarked choice. Since perfectives cannot occur in the present tense, they occur in either the past or future tense. The past tense is the most natural choice in the tasks designed for this dissertation.

Duratives are always imperfective in Russian and children in the earliest period of language acquisition correlate durative imperfectives with the present tense. This tense correlation can be partly explained by the fact that only the imperfective aspect can report on an action as happening in the present. This probably correlates directly with the early input children get. It is generally acknowledged that early conversations with children focus on the here and now of the speech act.

A further reason for the preference for durative imperfectives and telic perfectives might be that simplex imperfectives and perfective telics are morphologically unmarked. The perfective aspect for telic verbs is, moreover, Aktionsart-specifically unmarked. This suggests that children start out with the most unmarked forms.

Aspect studies of Russian so far have concentrated on the earliest periods of aspect acquisition; later development has been completely unknown territory. The comprehension experiment from Chapter 6 shows that Aktionsart plays a role in the understanding of aspectual forms at least until age 6: Aktionsart was a critical factor for aspect understanding in all age groups. Specifically, aspect was understood easiest in the telic Aktionsart by all children. All the other Aktionsarten, but especially the ingressive Aktionsart, led to considerable difficulty for aspect understanding, and no development was found across age.

The production experiment of Level 1 (Chapter 7), aiming at isolated utterances, did not confirm the correlation of telics with the perfective aspect and durative imperfectives with the present tense, as found in the earliest uses of Russian aspect and in an array of different languages over different age periods. First, there was no development over age. Second, the distribution of perfective and imperfective aspect within the telic Aktionsart was approximately even, with a slight preference for the

perfective aspect. Thus, there is no strong correlation of telic Aktionsart and perfective aspect in the description of isolated events. Further, the correlation between imperfective durative verbs and the present tense was not found at all. Most verbs, whether perfective or imperfective were used in the past tense.

Thus, it seems that the correlation found by Gagarina (2000) for the earliest period does not seem to hold at later stages of development (from age 3 onward). The production experiments of Level 2 (Chapter 8) and Level 3 (Chapter 9) were designed to test whether this is a general fact about Russian in the later periods of acquisition or restricted to this one context (isolated utterances).

To test this, I looked at the distribution of aspect in the telic Aktionsart in the experiments for Level 2 and Level 3. The results of these experiments turned out to be very different from the Level 1 production experiment. In the Level 2 experiment we find a very strong correlation between the perfective aspect and the telic Aktionsart. In the Level 3 experiment we also find a strong, even though slightly weaker aspect/Aktionsart correlation than in the Level 2 experiment. The production experiment results suggest that the relevant factor in the comprehension experiment of Level 1 (Chapter 6) is not Aktionsart in and of itself, but Aktionsart in context. This answers positively Question 3 posed in the Introduction. It also confirms the *Hypothesis of contextual relativity of aspect and Aktionsart*, and thereby more generally the *Hypothesis of context-driven learning*.

Further support for the *Hypothesis of context-driven learning* comes from the distribution of tense and aspect. The tense/aspect correlation found in Gagarina (2000) and other studies were replicated only in the experiment of Level 3 and in some narratives of younger children on Level 2. Only in the complex narratives of Level 3 do we find a dichotomy of past tense perfective telics and present tense imperfective duratives in some of the stories. In all other contexts, children predominantly used past tense regardless of aspect. Thus, the correlation of aspect and tense is as relative to a specific context as the correlation between aspect and Aktionsart.

Further, a very striking fact is that children of all age groups are sensitive to the distribution of forms, even though they do not yet necessarily use all the functions that are canonically attributed to these forms. This was shown in Chapter 9. The quantitative distribution of aspectual forms is the same across age, but children of different ages attribute different functions to the imperfective aspect. The younger children used the imperfective aspect to describe isolated actions, without relating them to each other. The older children in contrast used the imperfective aspect for backgrounding. The overall quantitative distribution of aspect, however, was the same across age groups and different across contexts (i.e., here levels discourse complexity).

The *Hypothesis of context-driven learning* is further confirmed by the results reported in Chapter 10, in which the use of the ingressive and the telic Aktionsarten was compared across two levels of discourse complexity (Level 1 and Level 3). One of the results of the Chapter 6 experiment was that ingressives are particularly difficult for children in all age groups. The reason is that the experiment focused isolated utterances, but ingressives are more appropriate in a sequence of events. In the Level 1 production experiment we should therefore expect that children will not use ingressives very much, whereas in the narratives of Level 3 they should make more use of ingressives. The hypothesis is strongly confirmed by the data of the Level 3 experiment. Additional support comes from a fact found in the Level 1 production experiment. In this experiment children were expected to describe a single, isolated event. They usually did so by providing a single utterance as description. But, children who used ingressives consistently embedded these ingressives in a sequence of events, i.e., they supplied an appropriate context for these verbs. They did this only with ingressive verbs.

The use of ingressives, however, is not only dependent on the appropriate context, but also on the cognitive development of the child (cf. Question 4 in the Introduction). Only children with a specific level of cognitive development, measured by narrative competence, used ingressives.

A further factor is the difference between analytic and synthetic morphology: analytic ingressives showed a clear developmental curve, whereas the acquisition of synthetic forms did not show a systematic pattern. The specific type of synthetic morphology (for example, suppletion vs. affixation) and morphological markedness, by contrast, proved irrelevant for the acquisitional process (Chapter 6).

To sum up: children from age 3 onward seem to be able to use all different kinds of aspectual forms, but this usage is restricted to specific contexts, and it is not yet independent of these contexts. Morphological markedness and Aktionsart-specific markedness do not seem to be very important in the period of development investigated in this dissertation. What is important, however, is contextual markedness. Children have no difficulty with contextually unmarked forms, but at least in some contexts they show considerable difficulty with contextually marked forms. This is shown by the fact that children do not understand specific forms in isolation, but produce the same forms with ease in a more appropriate context, namely in narratives. The prerequisite for the use of these forms is, however, a certain cognitive development, as measured by the ability to tell a story (cf. Chapter 10). Context-independent competence emerges only later.

2. Relevance of this study for theories of language acquisition

In the earliest period of the acquisition of Russian (Gagarina 2000), the correlation between aspect, tense, and Aktionsart seems to be the same as has been found in many languages (cf. above). Thus, aspectual forms are learned in an item-based fashion in the sense that they occur in only one construction type, e.g., imperfective duratives only occur in the present tense, whereas telics are restricted to the perfective aspect in the past tense. These findings by and large match up with the findings of Tomasello (1992), who has shown that early verb use is item-based and restricted to very specific constructions (also see Tomasello and Olguin 1993, Olguin and Tomasello 1993, Lieven, *et al.* 1997, Akhtar and Tomasello 1999). The question then

arises: how do children get from an item-based, individual usage pattern to the overall grammatical system?

I argue that for the acquisition of aspect there are three stages involved in this development. The first stage is characterized by an item-based usage, much as established for other categories by Tomasello and colleagues. In a second stage, children register the distribution and the use of aspect in different contexts. As shown by the three production experiments, the distribution of aspect and Aktionsart varies at this stage across levels of discourse complexity. Children of all age groups behave consistently within contexts but but variably across contexts. At this stage, children are very sensitive to frequency distributions within specific contexts. In some contexts children show adult behavior, whereas in other contexts they do not. Some forms are still tightly bound to their contextually unmarked contexts, but others are already used in marked contexts as well. If a form occurs in a contextually marked context, however, children may show difficulty with this form. This implies that children at this stage of development do not yet have a general concept of aspect, but rather a piecemeal, context-dependent concept. Therefore, what we need to analyze further are the contextual functions of different aspectual categories. This is the key to understanding how children move from an item-based to a general system.

The knowledge about contextual usage, however, needs to be enriched by the development of other abilities, such as narrative competence, and advanced morphological processing (e.g., understand all types of ingressives; see Chapter 10).

Only later in development do children start to generalize across contexts and finally reach the target stage. When the target stage is reached, depends on the linguistic category in question, its complexity, its distribution in contexts, whether the distribution varies across contexts or not, the cognitive development of the child, the morphological complexity of the forms, and possibly other factors.

The general development is summarized for two areas in Table 11.1.

Table 11.1: Stages in language development: the acquisition of aspect and argument structure constructions

	Aspect	Argument-structure constructions (valence, diathesis)
Stage 1: Item-based learning	Usage tied to specific Aktionsarten and tenses	Usage tied to specific verbs
Stage 2: Context-based learning	Usage tied to specific levels of discourse complexity	Usage tied to specific discourse context (?)
Stage 3: Context-independent proficiency	Generalized grammatical categories	Generalized constructional templates

According to the model shown in Table 11.1, I hypothesize that there is also a transition stage from verb-islands to full-fledged argument-structure constructions. I am not aware of evidence for this stage yet, but I expect Stage 1 and Stage 3 to be mediated by contextually restricted usage patterns characterized by specific frequency distributions. However, recent research by Diessel (2001) has brought forward such evidence in the acquisition of another domain of syntax, viz. complex sentence constructions: subordinate clauses are for some time restricted to specific discourse contexts. *Because*-clauses, for instance, are for some time restricted to questioning/answering pairs of the type *Why? – Because...* before they are generalized across different discourse contexts (Diessel 2001). It is likely that such observations can be made for other syntactic domains as well.

The two stages, item-based and context-based learning, are characterized by the importance of two types of context. For our Stage 1 in the acquisition of Russian aspect, it is the Aktionsart and tense marking of the verb that restrict the use. For the item-based stage in the acquisition of argument structure, Tomasello (1992) has shown that it is immediate clausal context of verbs that is relevant. I call this *micro-context*. If, for example, a child first encounters a verb in a transitive construction, s/he will first restrict her usage of this specific verb to transitive constructions. Thus,

the production of verbs is first strictly context-dependent here dependent on specific constructional contexts.

Stage 2 is characterized by another type of context: the *macro-context*. For the acquisition of aspect, the structure of the context itself is relevant, i.e., the level of complexity of discourse. What this intermediate stage looks like for the acquisition of argument structure is still unknown. But macro-contexts, or situation types have shown to be important for the acquisition of other linguistic features; cf., Budwig (1989) on the use of different first person pronouns in requests as opposed to information statements; Gee (1985) on the use of *gonna* and *will* in different situations; Ervin-Tripp (1981) on the issue that children express high-cost requests differently from low-cost requests; and Lieven (1997) on the role of situation for the acquisition of rote constructions.

The relevance of context for different levels of complexity and different stages of language development suggests that the *Hypothesis of context-driven learning* has a wide range of application, capturing much of the essence of language acquisition. At all stages of acquisition, children move from the specific to the general: from specific micro-contexts to constructional templates, from Aktionsart to abstract semantics and from specific discourse structures to general grammar.

Appendix

Stimuli used in the Level 1 comprehension experiment (Chapter 6)

1. Telics

<i>Kto pročital knihu?</i>	'Who read the book?'
<i>Kto napisal pis'mo?</i>	'Who wrote the letter?'
<i>Kto postroil dom?</i>	'Who built the house?'
<i>Kto narisoval lico?</i>	'Who drew the face?'
<i>Kto vzjal konfetki?</i>	'Who took the sweets?'
<i>Kto položil konfetki v storonu?</i>	'Who put the sweets aside?'
<i>Kto nalil sok v stakan?</i>	'Who poured the juice into the glass?'
<i>Kto perepisal?</i>	'Who copied?'
<i>Kto odkryl banku?</i>	'Who opened the can?'
<i>Kto zakryl banku?</i>	'Who closed the can?'
<i>Kto umylsja?</i>	'Who washed him/herself?'
<i>Kto vystiral rubašku?</i>	'Who washed the shirt?'
<i>Kto s'el pečenie?</i>	'Who ate the cookie?'
<i>Gde Maša vyrvala zub?</i>	'Where, (i.e. in which picture) did Maša tear the tooth out?'

2. Delimitatives

<i>Kto počital?</i>	'Who read for a while?'
<i>Kto poigral?</i>	'Who played for a while?'
<i>Kto posidel?</i>	'Who sat for a while?'
<i>Kto poplakal?</i>	'Who cried for a while?'

3. Ingressives

<i>Kto zaplakal?</i>	'Who started crying?'
<i>Kto zasmegal'sja?</i>	'Who started laughing?'

4. Semelfactives

<i>Kto kriknul?</i>	'Who cried out once?'
<i>Kto maxnul?</i>	'Who waved once?'
<i>Kto stuknul?</i>	'Who knocked once?'
<i>Gde prignula obez'janka?</i>	'In which picture did the monkey jump once?'

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